On the First Systematic Collection and Discussion of the Venango County Oil Wells of Western Pennsylvania. By E. S. Nettleton, C. E. Prepared for publication and communicated by John F. Carll, Assistant Geologist in charge of the Survey of the Oil Regions.

(*Read before the American Philosophical Society, January* 19, 1877.)

In the fall of 1868 the first systematic attempt was made to ascertain the direction and dip of the Oil Sands of the Venango region and the true relation which the oil producing rock of one district bears to that of another.

This was during the great Pleasantville oil excitement, when, probably for the first time, the attention of a large class of operators was called to the fact that there was a marked difference between the oil and oil sand of Pleasantville and surrounding districts, and the oil and oil sand of Oil Creek.

Previous to that time very few levels had been taken, and those only locally from well to well on the same farm, or within the bounds of one producing centre ; but some of the detached districts had been fortuitously connected by lines of levels run for pipe lines from station to station, and by preliminary Railway surveys which crossed the country in almost every direction. From these sources it was ascertained that the Pleasantville oil rock, although called the 4th sand, lay at a higher elevation than the 3d sand of Oil Creek.

Some operators held the opinion that the oil rocks ran horizontally under the whole country, and that by drilling deeper at Pleasantville, the Oil Creek 3d sand would be found, and a much larger supply of oil obtained. Others contended that the rocks dipped towards Oil Creek and the Pleasantville wells had already reached the Oil Creek sand. They went still further, and pointing to the old failures in the Pleasantville district, averred that there was no oil in the rock when these wells were put down, but that the flooding of the oil sands under the valley of Oil Creek, by the abandonment years before of so many wells, had forced the oil from its original home there to these higher portions of the rock.

Discussions on these points showed the necessity for more information on the subject; and while some chose to gain this information on their own account, by sinking wells deeper at considerable expense to see what might be below, a few believed that something could be learned by a careful study of the wells already drilled, in connection with a series of surface levels extending over a large area, embracing in one system all the main oil-producing centres.

As an outgrowth of this idea an informal meeting was held and a committee appointed to plan and carry out the work necessary to be done. Mr. E. S. Nettleton, then residing in Pleasantville, consented to act as one of the committee, and to undertake the task of running the lines of levels and collecting the well records. A circular was issued to well owners, and

blanks were prepared for filling in the well records, of which the following are copies :

Circular A. Pleasantville Pa.....1868.

Dear Sir:—A pressing need has long been felt by the more thoughtful operators in the Pennsylvania Oil Regions for a more thorough and accurate knowledge of the thickness, dip and general characteristics of the Oil-bearing Rock in this section. The drillings in different localities have established data sufficient for operations in those particular places, but no effort has been made to connect these together in one comprehensive whole, and very little is known as yet of the *relative* positions of the Oil-bearing Rocks in these several localities. In order that this want may be supplied a fund has been raised, a committee appointed to supervise the work, and the services of a competent Engineer secured. It is proposed to make *an accurate topographical survey of Pleasantville, Enterprise, Bean Farm, Pithole, Shamburg, Bull Run, and Pioneer Oil Districts,* and then by a comparison of the records of a large number of the most prominent wells in said districts, to prepare and publish a report, which we think will contain facts and figures of great value to those engaged in the development of Oil Territory. In furtherance of this object the enclosed series of questions have been prepared which we hope you will be so kind as to fill out and return to us,—and any further information you may be able to give will be duly acknowledged.

Signed S. Q. Brown, George K. Anderson, J. H. Hebert, John F. Carll, E. S. Nettleton, Committee.

Address all letters to E. S. Nettleton, Civil Engineer, Box 45, Pleasantville, Pa.

Circular B. Pleasantville, Pa.....1868.

Dear Sir :—Please fill out the following blank and mail to E. S. Nettleton, Civil Engineer, Box 45, Pleasantville, Pa.

Record of.....Well No.....
Located on.....Farm.
Lease No.....Tested.....186..
Distance from surface to top of First or "Mountain" Sand, No. of feet.....
Thickness of the First Sand, " .....
Distance from surface to top of Second Sand, " .....
Thickness of Second Sand, " .....
Distance from surface to top of Third Sand, " .....
Thickness of Third Sand, " .....
Distance from surface to top of Fourth Sand, " .....
Thickness of Fourth Sand, " .....
Distance from surface to top of Fifth Sand, " .....
Thickness of Fifth Sand, " .....
Distance from surface to Sixth Sand, " .....
Thickness of Sixth Sand, " .....
What is the entire depth of your well? " .....

At what depth were the mud veins? No. of feet.....
At what depth is the seed-bag? " .....
How far is the bottom of working chamber from the bottom of the well? " .....
Is your well cased? .....
Quality of the Oil-bearing Rock, Pebble or Sand? .....
What color of oil is produced? .....
Gravity of oil? .....
What has been your best production per day? ..Bbls.
How many engines would the best flow of gas run? .....
What is the Engineer's number of this well as marked on the Samson Post? .....
Remarks:.....

During the winter of 1868–9, the work was prosecuted with considerable interest and diligence, but like all other matters not directly personal, it soon began to be neglected by the committeemen who were all deeply engaged in their own affairs, and Mr. Nettleton was left to work out the problem as best he could, almost alone.

Meantime the field widened. New developments at Scrubgrass and Parker's Landing led off to the south, far beyond the limits proposed for our work. Mr. Nettleton had been attracted to the west, and connected himself with the Engineering Corps of Greeley Colony, which made it necessary for him to close up his affairs in the Oil Regions, preparatory to his removal. No one had any personal interest in continuing the investigation, and the work stopt just when it should have been carried forward, leaving the materials in hand in such an unfinished and incomplete condition that no report could be made which would be at all satisfactory to those who had subscribed to the funds for the Survey.

This was in the Spring of 1870. Mr. Nettleton before leaving Pleasantville, placed all the accumulated papers of the Survey in my hands, where they have remained to the present time. They were accompanied by the following brief report to the Committee, dated Pleasantville, April 1, 1870, and addressed to the Committee of the Topographical Survey :

Gentlemen :—I herewith present to you the facts and papers relating to the Survey which I commenced over one year since.

Levels have been carried to nearly all the important producing centres of the upper district, but I have not been able to connect Parker's Landing with the survey in consequence of its distance from my nearest "bench" at Venango City. I expected to have obtained the elevations along the Allegheny Valley Railway from its Chief Engineer, but have been disappointed.

Many difficulties have been encountered in getting information from well owners on whom I am entirely dependent for the data so essential to this work. Some are not willing and prompt in assisting in this way because they are under the impression that it is a private enterprise ; but the most serious obstacle met with is the characteristic indifference of the people

in the oil business to anything but that which promises an immediate personal benefit.

By means of the levels taken to the well mouths I have adjusted the records of one hundred and thirty-four wells in such a way that they all may be compared with one point. This point is the Ennis Well, Pleasantville, which is located on the highest ground in the county. All other wells are therefore below this base. The elevation of this point above tide I at first determined from information furnished me by the Smithsonian Institution to be 1761.81 feet. This result was aimed at by correcting my own levels with the levels of the Allegheny Valley Railway as I received them. But upon checking my line with other Railway Surveys, I find an error of about fifty-three feet, which I have traced to the Allegheny Valley Railway, between Venango City and Pittsburgh. This makes my base 1709 feet above tide instead of 1762 as first announced.*

In the arrangement of the strata of sandstone I have paid but little attention to the usual method of numbering, which, from the way of counting from the top is very liable to confuse, as in some places two or three mountain sands are found, and in others the first sand is the oil producing rock. I have discarded some records which were evidently incorrect, and have been forced to use some which are not altogether to be relied upon.

I have noted the elevation of 308 wells and about 80 permanent benches in different localities. I also give you the elevation above sea of several places in the western part of the state.

There have been sent out 153 blanks which have not been returned.

I have great confidence in this method of locating and defining the oil-bearing rocks, and from the data which I hand you very much can be gathered which is of practical use.

In the early part of my observations on this Survey I formed the opinion that the oil rocks dipped uniformly in one direction, but more extended surveys show differently. In some places the line of greatest dip is nearly south, while in others it is more westerly. The line of oil deposit lies almost invariably in the line of greatest dip, showing doubtless that the formation was made in swift running water, and the deposit of pebbles was in the line of the current. Hence, the "belts," which correspond with the dip.

If, in your opinion, this Survey is of any practical benefit I would suggest that it be put into the hands of the Producers' Association, with a view of making it to the interest of a larger number to assist in collecting the necessary data.

Much more work is yet required to define and locate the oil-bearing rocks in this section of the State, but the difficulties above mentioned and the lack of co-operation, together with demands on my own time which make it impossible for me to give it the attention required, have induced

* Many efforts have been made in 1874, '5 and '6 to discover the cause and quantity of this error but without the best success, although progress has been made towards its adjustment. [J. P. L.]

me to make this report and place in your hands, to use as you may deem best, all of the facts and figures thus far collected.

No part of the result has been made public, except a small sketch furnished to Dr. J. S. Newberry of the Ohio State Geological Survey.

All of which is respectfully submitted.

E. S. Nettleton, C. E.

Since my connection with the Second Geological Survey of Pennsylvania I have found these papers of great service, and been obliged to refer to them often for facts which could not now be otherwise obtained, but I did not feel at liberty to use the materials in any public way without Mr. Nettleton's consent and the acquiescence of the State Geologist. These restrictions are now removed by Mr. Nettleton's permission to publish whatever may be of general interest.

The well records are many of them imperfect, none of them indeed are just what the geologist requires, for they give no indication of the character of the strata between the Sandstones. The blanks were not prepared with a view of studying the lithology further than it was involved in an examination of the oil rocks. But they accomplished the purpose intended and brought out the facts required to demonstrate that there are different beds of sandstone lying at different horizons and all dipping with considerable uniformity to the southwest.

This may be shown in a general way by taking a few wells at random along the line surveyed from Pleasantville to Oil City—thus : (refer to the records)

(1) Ennis Well, Pleasantville, top of oil sand above ocean			807 feet.
(87) National, No. 2, 1½ mile southwest of Pleasantville			779 "
(127) Fink, No. 12, Shamburg	True 3d Sand		724 "
(231) Porter, Foster Farm, Oil Creek			678 "
(213) G. K. Anderson, No 134, Pet Centre			631 "
(258) Lady Suffolk, Blood Farm			588 "
(261) Well No. 23, Rynd Farm			568 "
(268) Champion, No. 2, Rouseville			557 "
(269) Elizabeth, Clapp Farm			545 "
(270) Siveily & Gardner, Allegheny Run			522 "

Between the National well and Fink, No. 12, there is a drop of about 45 feet in the figures here given from the Black oil rock or Stray, to the Green oil rock or 3d sand of Oil Creek, which accounts for what appears to be a greater dip according to the distance than on other parts of the line. The green oil rock is found under the Pleasantville district in its proper horizon as is shown by some of the well records, but is unproductive. Between the National and Shamburg both rocks yield oil in some wells. To make the whole series of ocean elevations above given uniform—that is, all referring to the top of the 3d Sand—the elevation at the National should be about 734 feet, and at Ennis' about 762 feet.

Without doubt, the general reader will be much confused in attempting to trace the oil sands in their proper order through the mass of records here given. No effort has been made to harmonize the apparent discrepancies made by drillers in numbering the Sandrocks. The records have been copied from the originals just as they were received, only making them to conform to the general plan adopted in the publication of the whole mass of records, good, bad and indifferent, which we have on hand. It will be a work for future study to select those which are reliable and to arrange and classify them in an intelligible manner. We hope that the publication of these records as they are given to us by men who claim to understand the order and arrangement of the oil rocks, will satisfy them that they are not working understandingly, and show them the necessity of a closer examination of the measures drilled through and a more careful numbering and measurement of the Sandrocks.

Mr. Nettleton's levels, as mentioned in his report, were all based on his Ennis Hill datum. In 1874 we established the height of this Hill, by levels connecting with the railways at Tidioute, Tionesta and Rouseville, as 1713 feet above tide.* We now add 7 feet to reduce this to ocean level,† making it 1720 feet above the ocean. The elevations of the following wells have all been adjusted to this standard.

All the wells not otherwise noted are located in Venango County.

Some of the records here given from Enterprise and the Columbia farm on Oil Creek have been published in a previous issue. It will be noted that these differ from the former quite materially—a circumstance which shows how unreliable, for close study, the best of records are, even when obtained from the well owners and superintendents themselves.

To make sure always that the well record sent in should be the particular one required Mr. Nettleton adopted the plan of numbering the wells in his field book as he leveled to them. He also carried with him a paint-pot and brush and marked the same number used in his note book plainly on the samson-post. This is the "engineer's number" referred to in the blanks. When the well owner returned the record he gave, in addition to the name of the well, the number on the samson-post, and thus there could be no mistake made in adjusting the levels to the record. These numbers are given in the following pages at the end of the name of the well, in brackets, thus: Ennis Well (1), Harmonial Well No. 1 (53), &c., &c.

*At Schuylkill bridge, Philadelphia, Pennsylvania Railroad datum.
†In Raritan Bay, Coast Survey datum.

I. *Wells in the Borough of Pleasantville and adjoining its east line.*

1. *Ennis Well.* (1)

October 14, 1868.

On lease No. 3, Guild & Wright tract, adjoining east line of Borough of Pleasantville. Authority, J. L. Ennis.

Well mouth above ocean (high tide) in feet					1720
?	446	to	446	=	1274
1st S. S	56	"	502	=	1218
?	168	"	670	=	1050
2d S. S	40	"	710	=	1010
?	99	"	809	=	911
3d S. S	30	"	839	=	881
?	74	"	913	=	807
4th S. S	22	"	935	=	785

Wet hole. Cased at 446′. Pumped 4 feet from the bottom.

Best production 200 barrels per day. Gas sufficient to fire 6 boilers. Black oil; gravity 43°.

2. *Swan and Belch Well, No.* 1. (57)

January 26, 1869.

S. M. Dunham Farm, lease No. 5. Canfield tract, adjoining east line of Borough of Pleasantville. Authority, Edwin Swan.

Well mouth above ocean in feet					1678
?	180	to	180	=	1498
1st S. S	15	"	195	=	1483
?	422	"	617	=	1061
2d S. S	24	"	641	=	1037
?	79	"	720	=	958
Stray S. S	25	"	745	=	933
?	15	"	760	=	918
3d S. S	28	"	788	=	890
?	72	"	860	=	818
4th S. S. pebble and sand.	9	"	869	=	809
? pocket.	$23\frac{1}{2}$	"	$892\frac{1}{2}$	=	$785\frac{1}{2}$

Wet hole. Cased at 407′. Pumped 12 feet from bottom.

Best production 130 barrels per day. Gas sufficient to fire three boilers. Black oil. Mud veins at 775′ and 862′.

3. *Bonta and Hawes Well, No.* 5. (60)

December, 1868.

Lease No. 4, Geroe farm, adjoining east line of Borough of Pleasantville. Authority, Charles P. Byron.

Well mouth above ocean in feet	1648

?		215	to	215	= 1433
1st S. S.		12	"	227	= 1421
?		205	"	432	= 1216
2d S. S.		22	"	454	= 1194
?		203	"	657	= 991
3d S. S.		50	"	707	= 941
?		135	"	842	= 806
4th S. S.	pebble.	16	"	858	= 790
?	pocket.	2	"	860	= 788

Wet hole. Cased at 280′. Pumped $1\frac{3}{4}$ feet from bottom.

Best production 120 barrels per day. Gas sufficient to fire 3 boilers. Black oil. Mud veins at 666′ and 852.′

4. *McGrew and Ritchie Well.* (5)

February 1869.

Jack Farm, McGrew, Ritchie & Co.'s tract, adjoining north-east corner of Borough of Pleasantville. Authority, James B. McClune.

Well mouth above ocean in feet					1684
?		135	to	135	= 1549
1st S. S.		85	"	220	= 1464
?		197	"	417	= 1267
2d S. S.		18	"	435	= 1249
?		194	"	629	= 1055
3d S. S.		24	"	653	= 1031
?		122	"	775	= 909
4th S. S.		35	"	810	= 874
?		67	"	877	= 807
5th S. S.	pebble.	11	"	888	= 796
?	pocket.	8	"	896	= 788

Wet hole. Cased at 425′.

Black oil.

5. *Jack Well.* (7)

February, 1869.

Jack Farm, adjoining the north-east corner of Borough of Pleasantville. Authority, George H. Jack.

Well mouth above ocean in feet					1680
?		402	to	402	= 1278
1st S. S.		18	"	420	= 1260
?		230	"	650	= 1030
2d S. S.		10	"	660	= 1020
?		65	"	725	= 955
3d S. S.		30	"	755	= 925
?		116	"	871	= 809

4th S. S.		11	"	882	= 798
?	pocket.	7	"	889	= 791

Wet hole. Cased at 405′.

Best production 12 barrels per day. Gas sufficient to fire one boiler.

6. *Rising Sun Well.* (8)

February, 1869.

Jack Farm, adjoining north-east corner of Borough of Pleasantville. Authority, Wm. A. Barnes.

Well mouth above ocean in feet					1676
?		390	to	390	= 1286
1st S. S.		28	"	418	= 1258
?		215	"	633	= 1043
2d S. S.		20	"	653	= 1023
?		112	"	765	= 911
3d S. S.		33	"	798	= 878
?		73	"	871	= 805
4th S. S.		11	"	882	= 794
?	pocket.	5	"	887	= 789

Wet hole. Cased at 397′. Black oil.

Best production per day 10 barrels. Gas sufficient to fire one boiler.

7. *Howe Well.* (11)

March, 1869.

Jack Farm, adjoining north-east corner of Borough of Pleasantville. Authority ———.

Well mouth above ocean in feet					1671
?		400	to	400	= 1271
2d S. S.		30	"	430	= 1241
? including 3d S. S.		432	"	862	= 809
4th S. S.		18	"	880	= 791
?	pocket.	6	"	886	= 785

Wet hole. Cased at 415′.

Best production 20 barrels per day. Gas sufficient to fire one boiler.

8. *Nettleton Well, No.* 1. (20)

January 17, 1866.

Nettleton tract, formerly Watkin's farm, lease No. 2, north-east corner of Borough of Pleasantville. Authority, E. S. Nettleton.

Well mouth above ocean in feet					1582
?		109	to	109	= 1473
1st S. S.		121	"	230	= 1352
?		72	"	302	= 1280
2d S. S.		46	"	348	= 1234

?		137	" 485	= 1097
Red Rock		55	" 540	= 1042
3d S. S.		17	" 557	= 1025
?		170	" 727	= 855
4th S. S.		9	" 736	= 846
?		126	" 862	= 720
5th S. S.	pebble and sand.	18	" 880	= 702
?	pocket.	11½	" 891½	= 690½

Wet hole. Cased at 180′. Pumped at 22′ from bottom.

Best production 35 barrels per day. Gas sufficient to fire 4 boilers. Black oil. Gravity 44. Mud veins at 557′ and 730′. The lowest water course is at 162′. At 716′ a quartz vein was struck. Well was tested thoroughly at 736′ and 560′. At the 736′ test considerable gas was found.

9. *Richey Well, No.* 1. (15)

December, 1868.

Nettleton Farm, lease 15, Borough of Pleasantville. Authority, John Nichols.

Well mouth above ocean level				1651
?		8	to 8	= 1643
1st S. S.		43	" 51	= 1600
?		330	" 381	= 1270
2d S. S.		34	" 415	= 1236
?		285	" 700	= 951
3d S. S.		32	" 732	= 919
?		113	" 845	= 806
4th S. S.	pebble and sand.	17	" 862	= 789

Wet hole. Cased at 384′. Pumped 5 feet from the bottom.

Best production per day 35 barrels. Gas sufficient to fire 2 boilers. Dark green oil. Gravity 43° to 48°.

10. *Plumer Well, No.* 1. (16)

April, 1869.

Nettleton Farm, Borough of Pleasantville. Authority, ———.

Well mouth above ocean in feet				1639
?		828	to 828	= 811
4th S. S.		20	" 848	= 791
?	pocket.	2	" 850	= 789

11. *Lippincott Well, No.* 1. (18)

February, 1869

Watkin's Farm, lease 17, Borough of Pleasantville, 50 rods south of Nettleton's Well. Authority ———.

Well mouth above ocean in feet	1619

?	340	to	340	= 1279
2d S. S.	8	"	348	= 1271
?	232	"	580	= 1039
3d S. S.	35	"	615	= 1004
?	25	"	640	= 979
4th S. S.	25	"	665	= 954
?	30	"	695	= 924
5th S. S.	20	"	715	= 904
?	99	"	814	= 805
6th S. S.	18	"	832	= 787
?pocket.	8	"	840	= 779

Wet hole. Cased at 341′.

Best production 3 barrels per day. Gas sufficient to fire two boilers. Black oil. Mud vein at 700′.

12. *Blakesley Well.* (14)

November, 1868.

Brown and House Farm, situated in the Borough of Pleasantville. Authority ———.

Well mouth above ocean in feet				1672
?	400	to	400	= 1272
2d S. S. estimated	25	"	425	= 1247
?	200	"	625	= 1047
3d S. S. estimated	15	"	640	= 1032
?	70	"	710	= 962
Stray S. S.	15	"	725	= 947
?	40	"	765	= 907
4th S. S.	40	"	805	= 867
?	56	"	861	= 811
5th S. S.	19	"	880	= 792

Wet hole. Cased at 415′.

Best production 10 barrels per day. Gas sufficient to fire one boiler. Black oil.

13. *United States Petroleum Co.'s Well, No.* 27. (23)

October 9, 1868.

Brown and House Tract, Borough of Pleasantville. Authority Wm. H. Kerns.

Well mouth above ocean in feet				1676
?	392	to	392	= 1284
1st S. S.	23	"	415	= 1261
?	206	"	621	= 1055
2d S. S.	40	"	661	= 1015
?	112	"	773	= 903
3d S. S.	25	"	798	= 878

?		74	"	872	= 804
4th S. S.	Sand	15	"	887	= 789
?	pocket.	7	"	894	= 782

Wet hole. Cased at 631′.

Best production 60 barrels per day. Gas sufficient to fire three boilers. Black oil.

14. *Harsh Well, No.* 3. (28)

October 20th, 1868.

Harsh tract, lease No. 3. Borough of Pleasantville. Authority, Samuel Harsh.

Well mouth above ocean in feet					1682
?		30	to	30	= 1652
1st S. S.		40	"	70	= 1612
?		66	"	156	= 1546
2d S. S. estimated		20	"	156	= 1526
?		609	"	765	= 917
3d S. S. estimated		30	"	795	= 887
?		77	"	872	= 810
4th S. S.	pebble and sand.	15	"	887	= 795
?	pocket.	7½	"	894½	= 787½

Wet hole. Cased at 450′. Pumped 9′ from bottom.

Best Production 70 barrels per day. Gas sufficient to fire 2½ boilers. Black oil.

Struck a water course at 140′ from the surface. A dry crevice, struck at 250′ from the surface, carried off the water coming in at 140′.

15. *Shriver Well, No.* 1. (29)

October 28th, 1868.

Harsh tract, lease No. 1, Borough of Pleasantville. Authority, Albert Insinger, Jr.

Well mouth above ocean in feet					1674
?		20	to	20	= 1654
1st S. S.		45	"	65	= 1609
?		545	"	610	= 1064
2d S. S.		32	"	642	= 1032
?		103	"	745	= 929
3d S. S.		30	"	775	= 899
?		97	"	872	= 802
4th S. S.	4 feet at top pebble; bottom sand.	20	"	892	= 782
?	pocket.	1	"	893	= 781

Wet hole. Cased at 615′. Pumped 3 feet from the bottom.

Best production 30 barrels per day. Gas sufficient to fire one boiler. Black oil. Mud veins at 760′ and 877′.

16. *Tidioute Well, No.* 1. (30)

October, 1868.

Connely Farm, Borough of Pleasantville. Authority, ———

Well mouth above ocean in feet				1670
?	410	to	410	= 1260
1st S. S	30	"	440	= 1230
?	193	"	633	= 1037
2d S. S	20	"	653	= 1017
?	102	"	755	= 915
3d S. S	30	"	785	= 885
?	82	"	867	= 803
4th S. S	17	"	884	= 786

Wet hole. Cased at 428′.

Best production 135 barrel per day. Gas sufficient to fire 2 boilers.

17. *Crocker Well.* (31)

October, 1869.

Connely tract, Borough of Pleasantville, Authority, ———.

Well mouth above ocean in feet				1675
?	408	to	408	= 1267
1st S. S	18	"	426	= 1249
?	440	"	866	= 809
4th S. S	20	"	886	= 789

Wet hole. Cased at 412′.

Best production 26 barrels per day. Gas sufficient to fire 1½ boilers. Black oil.

18. *Beam Well, No.* 1. (37)

June 25, 1868.

On land bought of T. B. Shugart, M.D., in Borough of Pleasantville. Authority, Beam Bros.

Well mouth above ocean in feet				1646
?	100	to	100	= 1546
1st S. S	12	"	112	= 1534
?	258	"	370	= 1276
2d S. S	15	"	385	= 1261
?	212	"	597	= 1049
3d S. S	28	"	625	= 1021
?	111	"	736	= 910
4th S. S	35	"	771	= 875
?	69	"	840	= 806
5th S. S.....yellow; pebble at top and middle.	17	"	857	= 789
?.....pocket.	1	"	858	= 788

Wet hole. Cased at 609. Pumped 3½ feet from bottom.

Best production 68 barrels per day. Gas sufficient to fire 18 boilers. Black oil. Mud veins at 746′ and 848′.

The sand rocks were all measured when struck and when through, with the exception of the 1st or Mt. sand, which was calculated by the length of the tools standing in the derrick and by the rope to the wrapper. Average production to January, 1869—6 months and 5 days—30 barrels per day. Tubing drawn only twice, and only four days stoppage altogether during that period. Production at January 1, 1869, 7 barrels per day.

19. *Say Well, No.* 6. (42)

November 26, 1868.

Zuver Farm, Borough of Pleasantville. Authority, Williams, Say & Co.

Well mouth above ocean in feet				1632
?	207	to	207	= 1425
1st S. S	92	"	299	= 1333
?	141	"	440	= 1192
2d S. S	20	"	460	= 1172
?	225	"	685	= 947
3d S. S	22	"	707	= 925
?	106	"	813	= 819
4th S. S	40	"	853	= 779
?	65	"	918	= 714
5th S. S. pebble.	18	"	936	= 696

Wet hole. Cased at 362′. Pumped 6 feet from bottom.

Best production 15 barrels per day. Gas sufficient to fire 2 boilers. Black oil.

20. *Say Well, No.* 5. (43)

September 29, 1868.

Zuver Farm, lease No. 1, Borough of Pleasantville. Authority, Williams, Say & Co.

Well mouth above ocean in feet				1623
?	110	to	110	= 1513
1st S. S	92	"	202	= 1421
?	141	"	343	= 1280
2d S. S	20	"	363	= 1260
?	225	"	588	= 1035
3d S. S	22	"	610	= 1013
?	114	"	724	= 899
4th S. S	60	"	784	= 839
?	36	"	820	= 803
5th S. S. pebble.	14	"	834	= 789

Wet hole. Cased at 356′. Pumped 5 feet from bottom.

Best production 90 barrels per day. Gas sufficient to fire 4 boilers. Black oil. Gravity 49°.

Too many holes drilled in the immediate vicinity for the good health of this well.

21. *Say Well, No. 2.* (54)

June 15, 1868.

Zuver Farm, lease No. 2, Borough of Pleasantville. Authority, Williams, Say & Co.

Well mouth above ocean in feet				1618
?	100	to	100	= 1518
1st S. S	90	"	190	= 1428
?	147	"	337	= 1281
2d S. S	20	"	357	= 1261
?	223	"	580	= 1038
3d S. S	25	"	605	= 1013
?	115	"	720	= 898
4th S. S	60	"	780	= 838
?	38	"	818	= 800
5th S. S	17	"	835	= 783

Wet Hole. Cased at 355′. Pumped 3′ from bottom.

Best production 80 barrels per day. Gas sufficient to fire 15 boilers. Black oil.

22. *Benedict Well.* (280)

February, 1869.

On Joseph Benedict's Lot, Borough of Pleasantville. Authority, C. L. Raver & Co.

Well mouth above ocean in feet				1634
?	390	to	390	= 1244
1st S. S	15	"	405	= 1229
?	197	"	602	= 1032
2d S. S	25	"	627	= 1007
?	103	"	730	= 904
3d S. S	40	"	770	= 864
?	62	"	832	= 802
4th S. S	18	"	850	= 784
? pocket.	5	"	855	= 779

Wet hole. Cased at 390′. Gas sufficient to fire one boiler.

Best production 3 barrels per day.

23. *Porter and Taylor Well, No.* 1. (49)

November 17, 1868.

Wm. Porter Farm, Borough of Pleasantville. Authority, Stephen Hine.

Well mouth above ocean in feet				1617
?	350	to 350	=	1267
1st S. S	25	" 375	=	1242
?	210	" 585	=	1032
2d S. S	40	" 625	=	992
?	90	" 715	=	902
3d S. S	40	" 755	=	862
?	51	" 806	=	811
4th S. S. fine pebble.	19	" 825	=	792
? pocket	4½	" 829½	=	787½

Wet hole. Cased at 355′. Pumped 6 feet from bottom.

Best production per day 14 barrels. Gas sufficient to fire one boiler. Black oil.

24. *Harmonial Well, No.* 1. (53)

February 1, 1868.

Wm. Porter Farm, Borough of Pleasantville. Authority, Norman Potter, agent.

Well mouth above ocean in feet				1614
?	70	to 70	=	1544
1st S. S	12	" 82	=	1532
?	494	" 576	=	1038
2d S. S	40	" 616	=	998
?	91	" 707	=	907
3d S. S	40	" 747	=	867
?	65	" 812	=	802
4th S. S. 15′ pebble, 3′ sand.	18	" 830	=	784
Slate pocket.	5	" 835	=	779

Wet hole. Cased at 312′. Pumped 9 feet from bottom.

Best production 125 barrels per day. Gas sufficient to fire 3 to 4 boilers. Black oil. Gravity 47°. Mud veins in 2d, 3d and 4th sands.

Well was cased first at 380′; flowed 3 months, averaging 100 barrels per day, but running down, it finally ceased yielding oil in paying quantities November 1, 1868. It was then drilled deeper, showing the following record:

Thickness of measures to bottom of 4th S. S	830	to 830	=	784
Slate	24	" 854	=	760
5th S. S	20	" 874	=	740
? pocket	6	" 880	=	734

The 5th or "green oil sand," was fine, gray and muddy. It furnished a good supply of gas and some green oil, but not in sufficient quantity to pay the expenses of pumping the well.

25. *Comey and Andrews Well, No.* 1. (113)

November 9, 1868.

Lease No. 11, west part of Porter Farm, now Brown, Byers & Co. Borough of Pleasantville. Authority, Gaylord Mattison.

Well mouth above ocean in feet				1581
?	100	to	100	= 1481
1st S. S	140	"	240	= 1341
?	75	"	315	= 1266
2d S. S	25	"	340	= 1241
?	80	"	420	= 1161
3d S. S	30	"	450	= 1131
?	230	"	680	= 901
4th S. S	20	"	700	= 881
?	95	"	795	= 786
5th S. S. pebble.	18	"	813	= 768
? pocket.	7	"	820	= 761

Wet hole. Cased at 320′. Pumped 9′ from the bottom.

Best production 3 barrels per day. Gas sufficient to fire ½ boiler. Black oil. Gravity 45°.

26. *McGrew Well, No.* 1. (70)

1868.

Brown Brothers Farm, Borough of Pleasantville. Authority, James McGrew.

Well mouth above ocean in feet				1635
?	12	to	12	= 1623
1st S. S	26	"	38	= 1597
?	338	"	376	= 1259
2d S. S	12	"	388	= 1247
?	208	"	596	= 1039
3d S. S	43	"	639	= 996
?	99	"	738	= 897
4th S. S	27	"	765	= 870
?	70	"	835	= 800
5th S. S	18	"	853	= 782
? pocket.	2	"	855	= 780

Wet hole. Cased at 382′. Black oil. Mud veins in 4th and 5th S. S's.

The numbers given to the sands are not the proper ones, as the mountain sand should not be counted. We pumped the well at several points in the sand marked 5th S. S. as above. I do not recall how many feet of pebble sand there were.

27. *Harmonial Well, No. 2.* (95)

July 1, 1868.

Armstrong Farm, lease No. 40, three-quarters of a mile nearly south from Pleasantville Corners. Authority, Norman Potter, agent.

Well mouth above ocean in feet				1641
?	36	to	36	= 1605
1st S. S	60	"	96	= 1545
?	294	"	390	= 1251
2d S. S.....estimated.	20	"	410	= 1231
?	350	"	760	= 881
3d S. S	25	"	785	= 856
?	55	"	840	= 801
4th S. S.....sand and pebble.	16	"	856	= 785
?.....pocket.	14	"	870	= 771

Wet hole. Cased at 395′. Pumped 14 feet from bottom.

Best production 80 barrels per day. Gas sufficient to fire 2 boilers. Black oil. Gravity 45°.

The three upper rocks were very much broken up. Production at this date (December 19, 1868) 10 barrels per day.

II. *Wells in the vicinity of Pleasantville.*

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28. *Baldwin and Porter Well, No. 1.* (238)

February, 1869.

On Gates Farm, Nicltown Road, three-quarters of a mile north-east of the Borough of Pleasantville. Authority, James B. McClune.

Well mouth above ocean in feet				1616
?	110	to	110	= 1506
1st S. S	90	"	200	= 1416
?	140	"	340	= 1276
2d S. S	31	"	371	= 1245
?	203	"	574	= 1042
3d S. S	21	"	595	= 1021
?	117	"	712	= 904
4th S. S	36	"	748	= 868
?	70	"	818	= 798
5th S. S	12	"	830	= 786
?	27	"	857	= 759
6th S. S....top white pebble, bottom gray sand.	20	"	877	= 739
?.....pocket.	10	"	887	= 729

Wet hole. Cased at 353′. Gas sufficient to fire 8 boilers.

This well was tested at 840′ in the "Black oil sand," and afterwards drilled to 887′. The flow of gas came from the lower or "Green oil sand." But little oil in either of the sands.

29. *Norman Potter Well.* (308)

January 1st. 1870.

On Aaron Gates' Farm, 1 mile north-east of Pleasantville. Authority ?

Well mouth above ocean in feet				1512
?	225	to	225	= 1287
1st S. S.	20	"	245	= 1267
?	215	"	460	= 1052
2d S. S.	28	"	488	= 1024
?	112	"	600	= 912
3d S. S	22	"	622	= 890
?...703′ to 707′, pebbly.	109	"	731	= 781
4th S. S...5′ pebble. 16′ gray sand.	21	"	752	= 760
?...pocket.	7	"	759	= 753

This well at the present time is pumping about 20 barrels of salt water per day. (Jan. 4th, 1870.)

30. *Mason Well.* (277)

1865–6.

On Prosser Farm, about 1½ miles north 80° east of Pleasantville. Authority, Jas. B. McClune.

Well mouth above ocean in feet				1551
?	90	to	90	= 1461
1st S. S.	68	"	158	= 1393
?	94	"	252	= 1299
2d S. S.	18	"	270	= 1281
?	228	"	498	= 1053
3d S. S.	13	"	511	= 1040
?	69	"	580	= 971
4th S. S.	20	"	600	= 951
?	30	"	630	= 921
5th S. S.	28	"	658	= 893
?	134	"	792	= 759
6th S. S.	10	"	802	= 749
? pocket.	3	"	805	= 746

Wet hole. Cased at 260′. Green Oil show.
Mud veins at 582′ and 634′.

31. *Fobes Well.* (278)

Fall of 1865.

Dunham Farm, 1½ miles east of Pleasantville. Authority, George C. Fobes.

Well mouth above ocean in feet				1521
?	85	to	85	= 1436
1st S. S.	55	"	140	= 1381

?	79	to	219	= 1302
2d S. S.	34	"	253	= 1268
?	284	"	537	= 984
3d S. S.	31	"	568	= 953
?	35	"	603	= 918
4th S. S.	28	"	631	= 890
?	86	"	717	= 804
5th S. S.	2	"	719	= 802
?	15	"	734	= 787
6th S. S.	11	"	745	= 776
?	96	"	841	= 680
Sand, shales and pebbles	24	"	865	= 656
?	11	"	876	= 645
Red Rock	57	"	933	= 588
Slate	107	"	1040	= 481
Red Rock	10	"	1050	= 471

Wet hole. Cased at —. Mud veins at 507′ and 597′.

This well was tested at 650′, and then drilled to its present depth and tested again, with but little show of oil at either point.

32. *Steele Well, No.* 1. (120)

November, 1868.

Benj. Tyrrell Farm, 1¼ miles south-east of Pleasantville, near Ledsham Well. Authority, ———.

Well mouth above ocean in feet				1566
?	620	to	620	= 946
3d S. S.	37	"	657	= 909
?	115	"	772	= 794
5th S. S. pebble.	17	"	789	= 777
? pocket.	7	"	796	= 770

Wet hole. Cased at 318′. Pumped 24 feet from bottom.

Best production 8 barrels per day. Black oil.

33. *Ledsham Well, No.* 1. (121)

November, 1866.

S. Q. Brown and Porter (or B. Tyrrel) Farm, 1¼ mile south-east of Pleasantville. Authority, Alfred Ledsham.

Well mouth above ocean in feet				1550
?	97	to	97	= 1453
1st S. S.	18	"	115	= 1435
?	141	"	256	= 1294
2d S. S.	58	"	314	= 1236
?	170	"	484	= 1066
3d S. S.	41	"	525	= 1025

?		58	to 583	= 967
4th S. S.		73	" 656	= 894
?		74	" 730	= 820
5th S. S.	brown coarse pebble.	13	" 743	= 807
?		27	" 770	= 780
6th S. S.	pebble.	20	" 790	= 760
?	pocket.	28	" 818	= 732

Wet hole. Cased at 300′. Pumped 15′ from bottom.

Best production 16 barrels per day. Half enough gas to fire one boiler. Black oil. Gravity 44°.

The 4th S. S. consists of two layers with a small stratum of slate intervening about the middle (say 10′ of slate). The 5th S. S. is of uniform texture throughout. The 6th S. S. is white, and finer than the 5th S. S.

34. *Terry Well.* (125)

———— ———— ————.

Bean Farm, $2\frac{3}{4}$ miles south-east of Pleasantville, near Farmers' Hotel. Authority, ————.

Well mouth above ocean in feet				1487
?		203	to 203	= 1284
1st S. S.		28	" 231	= 1256
?		196	" 427	= 1060
2d S. S.		26	" 453	= 1034
?		72	" 525	= 962
3d S. S.		20	" 545	= 942
?		25	" 570	= 917
4th S. S.		18	" 588	= 899
?		90	" 678	= 809
5th S. S.		14	" 692	= 795
?	pocket.	1	" 693	= 794

Wet hole. Black oil.

Wells have been put down deeper in the vicinity of this well which find 27′ of slate between the two lower sands, the 5th and 6th.

35. *Golden Well, No.* 2. (165)

February, 1868.

Pithole Golden and Cherry Run Petroleum Company's Golden Farm, 2 miles south of Pleasantville. Authority, John F. Carll.

Well mouth above ocean in feet				1551
?		72	to 72	= 1479
1st S. S.		75	" 147	= 1404
?		151	" 298	= 1253
2d S. S.		17	" 315	= 1236
?		131	" 446	= 1105

3d S. S.		11	to 457	= 1094
?		79	" 536	= 1015
4th S. S.		19	" 555	= 996
?		61	" 616	= 935
5th S. S.		21	" 637	= 914
?		32	" 669	= 882
6th S. S.		21	" 690	= 861
?		79	" 769	= 782
7th S. S.	pebble and sand.	15	" 784	= 767
?	pocket.	1	" 785	= 766

Wet hole. Cased at 300′. Pumped 2′ from bottom.

Best production 7 barrels per day. Half enough gas to fire a boiler. Black oil. Gravity 47°. Mud veins at 678′ and 777′.

36. *North Star Well, No.* 2. (163)

January 9, 1869.

Lease No. 1, North Star Company's "Clark Farm," 1½ miles south of Pleasantville. Authority, T. Chattle.

Well mouth above ocean in feet				1611
?		153	to 153	= 1458
1st S. S.		20	" 173	= 1438
?		172	" 345	= 1266
2d S. S.		25	" 370	= 1241
?		260	" 630	= 981
3d S. S.		62	" 692	= 919
?		23	" 715	= 896
4th S. S.		35	" 750	= 861
?		65	" 815	= 796
5th S. S.		12	" 827	= 784

Wet hole. Cased at 347′. Pumped 3′ 6″ from bottom.

Best production 35 barrels per day. Gas sufficient to fire one boiler. Dark oil. Mud veins 740′ and 822′.

37. *Hoozier Well.* (287)

1865.

At Dawson Centre, Pithole Creek, 1½ miles above Pithole City, and 4 miles south of Pleasantville. Authority, Norman R. Bates.

Well mouth above ocean in feet				1357
?		124	to 124	= 1233
1st S. S.		24	" 148	= 1209
?		209	" 357	= 1000
2d S. S.		24	" 381	= 976
?		76	" 457	= 900
3d S. S.		30	" 487	= 870

?		103	to	590	= 767
4th S. S.		20	"	610	= 747
?	pocket.	33	"	643	= 714

Best production 15 barrels per day. Green oil.

38. *Skidmore Well.* (293)

April, 1869.

McBride Farm, "Tip Top," 2½ miles south of Pleasantville. Authority?

Well mouth above ocean in feet..... 1623

?		787	to	787	= 835
4th S. S.		25	"	812	= 810
?		63	"	875	= 747
5th S. S.		22	"	897	= 725
?	pocket.	3	"	900	= 722

Wet hole. Cased at 420′.

Best production 35 barrels per day. Half enough gas to fire a boiler. Black oil.

This well is supposed to be pumping from the same as the 4th rock in Pleasantville, but the oil is of lighter color.

39. *Black Well.* (292)

——— ———.

Lease No. 25, Winslow Petroleum Co., "Tip Top," 2½ miles south of Pleasantville. Authority, Mr. Loud, Superintendent.

Well mouth above ocean in feet..... 1530

?		118	to	118	= 1412
1st S. S.		65	"	183	= 1347
?		123	"	306	= 1224
2d S. S.		34	"	340	= 1190
?		200	"	540	= 990
3d S. S.		16	"	556	= 974
?		14	"	570	= 960
4th S. S.		26	"	596	= 934
?		37	"	633	= 897
5th S. S.		22	"	655	= 875
?		43	"	698	= 832
6th S. S.		25	"	723	= 807
?		67	"	790	= 740
7th S. S.	pebble.	5	"	795	= 735
?		3	"	798	= 732
8th S. S.	pebble.	6	"	804	= 726
?	pocket.	10	"	814	= 716

Wet hole.

Best production 1 barrel per day. Half enough gas to fire a boiler.

40. *Olive Well.* (182)

1865.

Herbert Tract, Mill Farm, 2¼ miles south of Pleasantville. Authority?

Well mouth above ocean in feet					1486
?		202	to	202	= 1284
1st S. S.		38	"	240	= 1246
?		130	"	370	= 1116
2d S. S.		5	"	375	= 1111
?		155	"	530	= 956
3d S. S.		10	"	540	= 946
?		97	"	637	= 849
4th S. S.		21	"	658	= 828
?		77	"	735	= 751
5th S. S.		15	"	750	= 736
?		10	"	760	= 726
6th S. S.	pebble and sand.	12	"	772	= 714
?	pocket.	29	"	811	= 685

Wet hole. Not cased. Seed bag at 480′.
Black oil. Gravity 45°.

41. *Buffalo Well, No.* 1. (181)

December 26th, 1868.

Lease A, (10 acres,) Mill Farm, 1¾ miles south of Pleasantville. Authority, Wm. Williams & S. Simpkins.

Well mouth above ocean in feet					1486
?		60	to	60	= 1426
1st S. S.		50	"	110	= 1376
?		150	"	260	= 1226
2d S. S.		25	"	285	= 1201
?		240	"	525	= 961
3d S. S.		15	"	540	= 946
?		50	"	590	= 896
4th S. S.		20	"	610	= 876
?		130	"	740	= 746
5th S. S.	pebble and sand.	16	"	756	= 730

Wet hole. Cased at 535′. Pumped 7′ from bottom.
Best production 4 barrels per day. Half enough gas to fire 1 boiler. Black oil. Gravity 47°.
This well is supposed to be flooded by several old abandoned wells in the immediate vicinity. Have pumped in 27 days 42 barrels of roily oil, green and black, principally black.

42. *Snyder Well, No.* 1. (180)

December, 1868.

Lease No. 3, Mill farm, $1\frac{3}{4}$ miles south of Pleasantville. Authority, J. C. Champion.

Well mouth above ocean in feet				1510
?	50	to	50	= 1460
1st S. S.	40	"	90	= 1420
?	165	"	255	= 1255
2d S. S.	25	"	280	= 1230
?	130	"	410	= 1100
3d S. S.	25	"	435	= 1075
?	70	"	505	= 1005
4th S. S.	20	"	525	= 985
?	70	"	595	= 915
5th S. S.	14	"	609	= 901
?	31	"	640	= 870
6th S. S.	20	"	660	= 850
?	80	"	740	= 770
7th S. S.	18	"	758	= 752
?...pocket.	2	"	760	= 750

Wet hole. Cased at 275′. Pumped 8′ from bottom.

Best production 90 barrels per day. Gas sufficient to fire 1 boiler. Black oil. Gravity 48°. Mud veins in both the lower sands.

43. *Bates Well, No.* 1. (102)

—— —— 1866

Dawson Farm, $1\frac{1}{3}$ miles south of Pleasantville. Authority, N. R. Bates.

Well mouth above ocean in feet				1587
?	560	to	560	= 1027
3d S. S. estimated	30	"	590	= 997
?	50	"	640	= 947
4th S. S.	30	"	670	= 917
?	122	"	792	= 795
5th S. S.....fine pebble and sand.	13	"	805	= 782
?.....pocket.	15	"	820	= 767

Wet hole. Cased at 400′. Pumped 20′ from bottom.

Black oil. Gravity 47°, when first pumped.

At one time during the first ninety days of the production the well yielded at the rate of 500 barrels per day, and was running at this rate when the men, in the excitement occasioned by so great a flow of oil, "shut down" to connect with a larger tank. This seemed to check the flow so effectually that the well could never again be brought up to its former production. The first part of the record was lost. My driller re-

ported *lime* and sand for 30′ above the 5th S. S. Overlying this was a stratum of *soapstone* more than 20′ thick, in which was a *crevice* or cavity 5′ in depth, then 3 of soapstone, then a *cavity* of 11′ in depth, as measured by pole tools.*

44. *Bates Petroleum Co. Well, No.* 3. (119)

Fall and Winter of 186[illegible].

Matteson Farm, Pleasantville and Enterprise road, half a mile north of Pleasantville. Authority, N. R. Bates.

Well mouth above ocean in feet				1463
?	175	to	175	= 1288
1st S. S.	40	"	215	= 1248
?	201	"	416	= 1047
2d S. S.	40	"	456	= 1007
?	105	"	561	= 902
3d S. S.	33	"	594	= 869
?	84	"	678	= 785
4th S. S. inferior, gray.	12	"	690	= 773
?	10	"	700	= 763
5th S. S. close, some pebbles.	20	"	720	= 743
? pocket.	10	"	730	= 733

Wet hole. Cased at 190.

Best production half barrel per day. Gas sufficient to fire half boiler. Green oil.

When this well was first tested, after a few days of pumping, it showed very well, giving considerable gas and throwing at intervals a full pipe of oil. At this time an accident occurred, fastening the working valve so as to necessitate the drawing of the tubing. As the well was not cased at this time it seemed to be injured very much by the letting in of the water, and never again made so good a show as at first.

45. *Paschmacker Well.* (198)

1868.

Near school house on Pleasantville and Enterprise road, 1 mile north of Pleasantville. Authority, M. P. Barber.

Well mouth above ocean in feet				1586
?	306	to	306	= 1280
1st S. S.	21	"	327	= 1259
?	53	"	380	= 1206
2d S. S.	26	"	406	= 1180

*As these well records are here merely placed on record no comment is made on such extraordinary (or rather, ordinary) statements. The literature of oil is full of them. They are mostly based on errors of observation easily explained. [J. P. L.]

?	284	to 690	=	896
3d S. S.	20	" 710	=	876
?	110	" 820	=	766
4th S. S.	21	" 841	=	745
?.....pocket.	114	" 955	=	631

Wet hole.

Best production —. Green oil. Little gas. Red water.

46. *Eaton Well.* (289)

April, 1869.

On lease No. 1, J. Y. Siggins Farm, 1 mile north-west of Pleasantville. Authority, James Y. Siggins.

Well mouth above ocean in feet				1668
?	140	to 140	=	1528
1st S. S.	35	" 175	=	1493
?	45	" 220	=	1448
2d S. S.	50	" 270	=	1398
?	373	" 643	=	1025
3d S. S.	40	" 683	=	985
?	97	" 780	=	888
4th S. S.....pebble.	20	" 800	=	868
?	121	" 921	=	747
5th S. S.....sand	12	" 933	=	735
?.....pocket.	9	" 942	=	726

Wet hole. Cased at 450′. Mud veins at centre of 3d and 4th sands.

Best production 2 gallons per day. Green oil.

About 10′ of the top of the 4th S. S. was pebbly and ought to have produced oil, if immediately tested, but the well was drilled to the 5th sand before the tubing was put in. This sand was white and close, with no pebbles.

47. *Siggins Well.* (291)

November, 1868.

James Y. Siggins Farm, 1 mile north-west of Pleasantville. Authority, James Y. Siggins.

Well mouth above ocean in feet				1535
?	95	to 95	=	1440
1st S. S.	40	" 135	=	1400
?	125	" 260	=	1275
2d S. S.	37	" 297	=	1238
?	219	" 516	=	1019
3d S. S.	42	" 558	=	977
?	103	" 661	=	874

4th S. S.	15	to 676	=	859
?	104	" 780	=	755
5th S. S.	19	" 799	=	736
?	81	" 880	=	655

Wet hole.

The 4th S S. was a splendid pebble rock with excellent show of oil. Got the sand pump stuck in drilling and had to drill it out, and this is thought to have spoiled the well.

48. *Smythe Well.* (118)

1869.

John McCaslin Farm, 1 mile west of Pleasantville. Authority, ———.

Well mouth above ocean in feet				1608
?	142	to 142	=	1466
1st S. S.	66	" 208	=	1400
?	128	" 336	=	1272
2d S. S.	36	" 372	=	1236
?	208	" 580	=	1028
3d S. S.	42	" 622	=	986
?	98	" 720	=	888
4th S. S.	29	" 749	=	859
?	110	" 859	=	749
5th S. S. gray sand.	19	" 878	=	730
? pocket.	5	" 883	=	725

Wet hole. Cased at 375′.

No paying production. The well was tested at 749′, where some black oil was obtained. Afterwards the well was put down to the next (5th) S. S., from which it produced very little green oil.

49. *Horseshoe Well, No.* 1. (117)

July, 1866.

On Pithole, Golden and Cherry Run Oil Co.'s tract, $1\frac{1}{4}$ miles south-west of Pleasantville. Authority, John F. Carll.

Well mouth above ocean in feet				1553
?	135	to 135	=	1418
1st S. S.	30	" 165	=	1388
?	120	" 285	=	1268
2d S. S.	35	" 320	=	1233
?	220	" 540	=	1013
3d S. S.	28	" 568	=	985
?	106	" 674	=	879
4th S. S.	27	" 701	=	852

?.....		104	"	805	= 748
5th S. S.....sand and pebble.		35	"	840	= 713

Wet hole. Cased at 300′. Pumped 10′ from bottom.

Best production a few gallons per day. Green oil. Gas sufficient to fire 2 boilers.

Mud veins at 540′, 695′, and 765′.

50. *Children's Well, No.* 1. (97)

November 4, 1868.

Armstrong Farm, lease 101, adjoining Brown Bros. tract, ½ mile south of the Borough of Pleasantville. Authority, ———.

Well mouth above ocean in feet					1638
?		834	to	834	= 804
4th S. S.....pebble and sand.		12	"	846	= 792
?.....pocket.		14	"	860	= 778

Wet hole. Cased at 418′.

Best production 42 barrels per day. Gas sufficient to fire 3 boilers. Black Oil.

51. *Brown and Warner Well.* (110)

March, 1868.

Armstrong Farm, lease No. 89, ½ mile south of Pleasantville. Authority?

Well mouth above ocean in feet....					1579
?		328	to	328	= 1251
1st S. S.....		30	"	358	= 1221
?		427	"	785	= 794
4th S. S.....		18	"	803	= 776

Wet hole. Cased at 340′. Black Oil.

Best production 90 barrels per day.

52. *Maple Shade Well, No.* 1. (105)

July 7th, 1868.

Brown, Fertig and Hammond tract, 1¼ miles south of Pleasantville. Authority, ———.

Well mouth above ocean in feet.....					1555
?.....		768	to	768	= 787
4th S. S.....		18	"	786	= 769
?.....pocket.		6	"	792	= 763

Wet hole. Cased at 418′.

Best production 150 barrels per day. Gas sufficient to fire 4 boilers. Black Oil.

This record is unreliable.

53. *Holbrook Well, No.* 1. (81)

August, 1866.

New York and Providence Petroleum Co. farm, 1 mile south-west of Pleasantville Corners. Authority, R. W. Holbrook.

Well mouth above ocean in feet					1540
?		104	to	104	= 1436
1st S. S.		47	"	151	= 1389
?		147	"	298	= 1242
2d S. S.		20	"	318	= 1222
?		205	"	523	= 1017
3d S. S.		27	"	550	= 990
?		110	"	660	= 880
4th S. S.		22	"	682	= 858
?		74	"	756	= 784
5th S. S.	pebble.	24	"	780	= 760
?		15	"	795	= 745
6th S. S.		30	"	825	= 715
?	pocket.	15	"	840	= 700

Wet hole. Cased at 325′. Pumped 72 feet from bottom.

Best production 15 barrels per day. Gas sufficient to fire 2 boilers. Black oil. Gravity 42°.

The 6th sandrock was found to be a hard close white sand. The well has been tubed from 756 feet to 816 feet, with same result. Good show of oil and gas in the 4th S. S.

54 *Concordia Well.* (174)

1868

North-east part of James Farrel Farm, lease No. 1, 1¾ miles south-west of Pleasantville. Authority, ———.

Well mouth above ocean in feet					1578
?	pocket.	100	to	100	= 1478
1st S. S.		80	"	180	= 1398
?		180	"	360	= 1218
2d S. S.		28	"	388	= 1190
?		212	"	600	= 978
3d S. S.		18	"	618	= 960
?		192	"	810	= 768
4th S. S.		27	"	837	= 741
?		10	"	847	= 731
5th S. S.	sand.	40	"	887	= 691

Wet hole. Cased at 350′.

Best production a "good show" of green oil. Mud vein at 815′.

55. *Baum Well, No.* 1. (175)

1868.

South-east part of north half of J. Farrell Farm, 1½ miles south-west of Pleasantville. Authority, Grant Parkhurst.

Well mouth above ocean in feet				1573
?	90	to	90	= 1483
1st S. S.	100	"	190	= 1383
?	154	"	344	= 1229
2d S. S.	20	"	364	= 1209
?	216	"	580	= 993
3d S. S.	21	"	601	= 972
?	179	"	780	= 793
4th S. S.	18	"	798	= 775
?	36	"	834	= 739
5th S. S.	38	"	872	= 701
?.....pocket.	15	"	887	= 686

Wet hole. Cased at 360′.

Best production 3 barrels per day. Half enough gas to fire one boiler. Black oil in 4th S. S., and green oil in 5th S. S. Gravity, black oil 48°, and green oil 46°.

The above well was drilled in the winter of 1867-8; was tested at 810′ and failed to produce oil in paying quantities; was then drilled to the depth of 878′ with the same result. Yellow pebble at 800′, white pebble at 835′. The well has since been abandoned. I do not think it was ever properly tested at 844′ or in the 5th S. S.

56. *Phœnix Well, No.* 1. (86)

August, 1868.

Bates Petroleum Co. tract, 1½ miles south-west of Borough of Pleasantville. Authority, ———.

Well mouth above ocean in feet				1520
?	80	to	80	= 1440
1st S. S.	56	"	136	= 1384
?	131	"	267	= 1253
2d S. S.	20	"	287	= 1233
?	218	"	505	= 1015
3d S. S.	15	"	520	= 1000
?	120	"	640	= 880
4th S. S.	25	"	665	= 855
?	74	"	739	= 781
5th S. S.....pebble and sand	36?	"	775	= 745

Wet hole. Cased at 510′.

Best production 90 barrels per day. Gas sufficient to fire 2 boilers. Black oil.

[The record of this well, as given in the blank, from the top of the 5th S. S. down is evidently wrong. It is as follows:

Top of 5th S. S.	739′
Thickness	28′
Top of 6th S. S.	761′
Thickness	14′
Depth of well	775′]

57. *National Well, No. 2.* (87)

National Oil Co. tract, 1½ miles south-west of Borough of Pleasantville. Authority, E. L. Pitcher.

Well mouth above ocean in feet				1526
?		101 to 101	=	1425
1st S. S.		29 " 130	=	1396
?		150 " 280	=	1246
2d S. S.		32 " 312	=	1214
?		226 " 538	=	988
3d S. S.		21 " 559	=	967
?		41 " 600	=	926
4th S. S.		69 " 669	=	857
?		78 " 747	=	779
5th S. S.	pebble.	15 " 762	=	764
?	pocket.	7 " 769	=	757

Wet hole. Cased at 300′. Pumped 7 feet from bottom.

Best production 83 barrels per day. Gas sufficient to fire 1½ boilers. Black oil. Gravity 49°. The 4th S. S. is broken by 20 feet of slate and shelly rock.

III. *Wells at Shamburg and Vicinity.*

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58. *Pierson Well.* (177)

1869.

King lot, three-quarters of a mile north-east of Shamburg. Authority, William Morgan.

Well mouth above ocean in feet				1584
?		149 to 149	=	1435
1st S. S.		60 " 209	=	1375
?		147 " 356	=	1228
2d S. S.		23 " 379	=	1205
?		241 " 620	=	964
3d S. S.		12 " 632	=	952

?.....		98	to 730	=	854
4th S. S..		25	" 755	=	829
?.....		77	" 832	=	752
5th S. S.....	pebble at top.	10	" 842	=	742
?.....	pocket.	13	" 855	=	729

Wet hole. Cased at 360′.

Best production 10 barrels per day. Half enough gas to fire one boiler. Black oil.

59. *Emory Well, No.* 2. (307)

August, 1869.

Walter Scott Petroleum Company's tract, adjoining C. Clark Farm, half mile east of Shamburg. Authority, ———.

Well mouth above ocean in feet.....					1641
?.....		900	to 900	=	741
5th S. S.....		18	" 918	=	723
?.....		12	" 930	=	711
6th S. S.....	pebble and sand.	35	" 965	=	676
?.....		7	" 972	=	669

Wet hole. Cased at ——.

Best production 80 barrels per day. Gas sufficient to fire one boiler. Green oil.

This well was put down and tested in the 5th S. S., and obtained black oil in small quantities; was afterwards put deeper. This 6th rock is evidently the one called the 5th in Shamburg.

60. *Oak Shade Well, No.* 1. (128)

September 10, 1868.

Clark Farm, ten acre lease, near Shamburg. Authority, George W. Arnold, Supt.

Well mouth above ocean in feet.....					1545
?.....		120	to 120	=	1425
1st S. S.....		93	" 213	=	1332
?.....		117	" 330	=	1215
2d S. S.....		30	" 360	=	1185
?.....		226	" 586	=	959
3d S. S.....		14	" 600	=	945
?.....		104	" 704	=	841
4th S. S.....		13	" 717	=	828
?.....		83	" 800	=	745
5th S. S.....	pebble and sand.	65	" 865	=	680

Wet hole. Cased at 345′. Pumped 23′ from bottom.

Best production 40 barrels per day. No gas of any account. Black oil. Gravity 36° or 37°. Mud veins at 590′ and 850′.

This well was not drilled through the 5th S. S. From other wells near

by we judge there remain 15′ more of sand, which would make the entire thickness of the sand 65′ + 15′ = 80′. The well from the time it was struck has averaged 25 barrels per day. [Jan. 1869.]

61. *Lady Jane Well. No.* 1. (129)

December 13, 1868.

Clark Farm, 5 acre lease, near Shamburg. Authority, Arnold & Lockwood.

Well mouth above ocean in feet				1539
?	120	to	120	= 1419
1st S. S.	116	"	236	= 1303
?	90	"	326	= 1213
2d S. S.	39	"	365	= 1174
?	213	"	578	= 961
3d S. S.	22	"	600	= 939
?	98	"	698	= 841
4th S. S.	36	"	734	= 805
?	66	"	800	= 739
5th S. S. pebble and sand	73	"	873	= 666

Wet hole. Cased at 347′. Pumped 22′ from bottom.

Best production 20 barrels per day. Not gas enough to fire a boiler. Black oil. Gravity 36° or 37°. Mud veins at 340′, 720′, 810′, and 850′. The well was not drilled through the 5th sand by 15′ or 20′. Small division of slate in this sand.

62. *Lockwood Well, No.* 1. (131)

September 20, 1866.

Clark Farm, near Shamburg. Authority, E. M. & T. J. Lockwood.

Well mouth above ocean in feet				1492
?	103	to	103	= 1389
1st S. S.	40	"	143	= 1349
?	139	"	282	= 1210
2d S. S.	29	"	311	= 1181
?	219	"	530	= 962
3d S. S.	7	"	537	= 955
?	105	"	642	= 850
4th S. S.	35	"	677	= 815
?	108	"	785	= 707
5th S. S. pebble and sand	46	"	831	= 661
? pocket	11	"	842	= 650

Wet hole. Cased at 300′. Pumped 40′ from bottom.

Best production 6 barrels per day. Half enough gas to fire one boiler. Color of oil between black and green. Gravity 37°. Mud vein at 645′.

The Lockwood Well showed evidences of being on the outskirts of the black oil bearing rock, as it produced a large quantity of salt water, and the Shamburg well in close proximity produced light green oil.

63. *Fink Well.* (127)

February 22, 1867.

On lease No. 12, Pittsburgh and Cherry Run Oil Company, Shamburg. Authority, John J. B. Fink.

Well mouth above ocean in feet					1500
?	70	to	70	=	1430
1st S. S.....white sand, 60′, gray sand 22′ =	82′	"	152	=	1348
?	137	"	289	=	1211
2d S. S., white sand and pebbles 16′, gray sand 30′=	46	"	335	=	1165
?	185	"	520	=	980
3d S. S.	25	"	545	=	955
?	95	"	640	=	860
4th S. S....pebbly at top, bottom fine and white	28	"	668	=	832
?	108	"	776	=	724
5th S. S.....loose open rock.	57′	"	833	=	667
? .....pocket.	2	"	835	=	665

Wet hole. Cased at 340′. Pumped 15′ from bottom.

Best production, 210 barrels per day. Green oil. Gravity 48°. Gas sufficient to fire from 4 to 6 boilers. Mud veins at 530′, 645′ and 806′. Crevice at 778′.

We are troubled a great deal with mud running into the well at 806′. The well is still producing, and could be made to pump 20 barrels per day if we could exhaust the mud, and keep the well clean [Jan. 1st, 1869].

There are shells ranging in thickness, between the regular Sandrocks which I could not give in this blank.

64. *Fink Well, No.* 1. (147)

May 5th, 1867.

Farm of Huidekoper Petroleum Co. of N. Y., lease No. 1, 10 acres, Shamburg. Authority, John J. B. Fink.

Well mouth above ocean in feet					1510
?	100	to	100	=	1410
1st S. S.	72	"	172	=	1338
?	126	"	298	=	1212
2d S. S.	24	"	322	=	1188
?	206	"	528	=	982
3d S. S.	33	"	561	=	949
?	96	"	657	=	853
4th S. S.	42	"	699	=	811
?	95	"	794	=	716
5th S. S.....pebble at top and bottom.	49	"	843	=	667

Wet hole. Cased at 325′. Pumped 15′ from bottom.

Best production 75 barrels per day. Gas sufficient to fire 2 boilers. Light green oil. Gravity 46° to 47°.

The oil rock has a 7′ shell above it.

This well was finished May 3d, 1867. The well will produce an average

of from 10 to 15 barrels per day now, January, 1869. I have two more wells on this same lease, and their records do not vary much from this one. One is now averaging from 25 to 40 barrels per day, and the other about 6 barrels.

65. *Fee Well, No.* 1. (139)

December 23, 1867.

Atkinson Farm, lease 106, Shamburg. Authority, F. E. Hammond.

Well mouth above ocean in feet					1533
?		817	to	817	= 716
5th S. S.	pebble and sand.	45	"	862	= 671

Wet hole. Not cased. Seed bag at 322′. Pumped 20′ from bottom.

Best production 512 barrels per day. Gas sufficient to fire 6 boilers. Green oil. Gravity 47½°.

This well ceased producing October, 1868. The total production was 49,262$\frac{44}{100}$ barrels. The largest production was in the month of May, being 11,200 barrels.

66. *Jack Brown Well, No.* 1. (140)

December 27th, 1867.

Atkinson Farm, lease 108, Shamburg. Authority, F. E. Hammond.

Well mouth above ocean in feet					1533
?		98	to	98	= 1435
1st S. S.		100	"	198	= 1335
?		112	"	310	= 1223
2d S. S.		25	"	335	= 1198
?		221	"	556	= 977
3d S. S.		13	"	569	= 964
?		110	"	679	= 854
4th S. S.		25	"	704	= 829
?		111	"	815	= 718
5th S. S.	pebble and sand.	40	"	855	= 678

Wet hole. Cased at 320′. Pumped 3′ from bottom.

Best production 441 barrels per day. Gas supplied at one time 15 boilers. Green oil. Gravity 47½°. Mud vein at 830′.

This well ceased to produce August 17th, 1868. The total production was 65,916$\frac{99}{100}$ barrels, averaging 281$\frac{13}{100}$ barrels per day from the commencement of production to the close. The average price paid for this oil was $2.52 per barrel at the well. During the month of April, 1868, it produced 14,500 barrels, and the same was delivered to Pipe Co., averaging 483⅓ barrels daily.

67. *Skinner Well, No* 1. (142)

April, 1868.

Lease No. 100, Atkinson Farm, Shamburg. Authority, F. E. Hammond.

Well mouth above ocean in feet				1537
?	101	to	101	= 1436
1st S. S.	100	"	201	= 1336
?	110	"	311	= 1226
2d S. S.	25	"	336	= 1201
?	222	"	558	= 979
3d S. S.	13	"	571	= 966
?	199	"	770	= 767
4th S. S.	25	"	795	= 742
?	23	"	818	= 719
5th S. S. pebble and sand.	45	"	863	= 674
? pocket.	5	"	868	= 669

Wet hole. Not cased. Seed bag at 330′. Pumped 18′ from bottom.

Best production 150 barrels per day. Gas sufficient to fire 2 boilers. Green oil. Gravity 47½°. Mud vein at 828′.

This well produced 11,611 $\frac{38}{100}$ barrels of oil, 43 gallons to the barrel. This was sold at an average price of $3.81 per barrel. Well ceased to produce October, 1868.

68. *Hammond Brothers Well, No.* 1. (144)

January, 1869.

Lease 42, Atkinson Farm, Shamburg. Authority, F. E. Hammond.

Well mouth above ocean in feet				1575
?	142	to	142	= 1433
1st S. S.	100	"	242	= 1333
?	135	"	377	= 1198
2d S. S.	25	"	402	= 1173
?	196	"	598	= 977
3d S. S.	13	"	611	= 964
?	107	"	718	= 857
4th S. S.	40	"	758	= 817
?	100	"	858	= 717
5th S. S. pebble and sand.	45	"	903	= 672
? pocket.	7	"	910	= 665

Wet hole. Cased at 375′. Pumped 5′ from bottom.

Best production 40 barre's per day. Half enough gas to fire a boiler. Green oil. Gravity 47½°.

69. *Tallman Farm Well, No.* 2. (135)

November, 1868.

Lease No. 2, Tallman Farm, near Shamburg. Authority, Lyman Stewart.

Well mouth above ocean in feet				1501
?	70	to	70	= 1431
1st S. S.	80	"	150	= 1351
?	140	"	290	= 1211
2d S. S.	15	"	305	= 1196
?	225	"	530	= 971
3d S. S.	25	"	555	= 946
?	110	"	665	= 836
4th S. S.	40	"	705	= 796
?	90	"	795	= 706
5th S. S. Sandy.	43	"	838	= 663
? pocket.	14	"	852	= 649

Wet hole. Cased at 300′. Pumped 12′ from bottom.

Best production 8 barrels per day. Gas sufficient to fire one boiler. Green oil. Gravity 46°. Mud veins at 673′ and at 828′.

At 511′ shelly rock; at 643′ crevice of 3″. From 643′ to 671′ we find crevices of from 2″ to 8″, about 10′ apart; at 672′ a broken rock, and at 677′ a small crevice; at 770′ a crevice of 3″; at 788′ rough rock. From 801′ to 804′ pebble rock. 5th S. S. rough and broken, with small crevices. No discovery of effects of torpedo on rock, neitaer did they (we put in 5) improve materially the production.

Note.—The above measurements are taken from Dale's crevice searcher's record, and from the driller's memoranda.

70. *Andrews and Stuart Well, No.* 1. (149)

Lease 86, Tallman Farm, Shamburg. Authority, ———.

Well mouth above ocean in feet				1532
?	85	to	85	= 1447
1st S. S.	80	"	165	= 1367
?	145	"	310	= 1222
2d S. S.	35	"	345	= 1187
?	205	"	550	= 982
3d S. S.	15	"	565	= 967
?	115	"	680	= 852
4th S. S.	40	"	720	= 812
?	90	"	810	= 722
5th S. S. pebble.	50	"	860	= 672

Wet hole. Cased at 320′. Pumped 4′ from bottom.

Best production 300 barrels per day. Gas sufficient to fire 5 boilers. Green oil. Gravity 43° to 45°. Mud veins at 688′, 712′, 820′ and 850′.

71. *Chatfield and Tomlinson Well, No* 1. (183)

March, 1867.

Lease No. 12, Henderson Farm, Upper Cherry Run, half mile south of Shamburg. Authority, Chatfield and Tomlinson

Well mouth above ocean in feet				1530
?	100	to	100	= 1430
1st S. S	95	"	195	= 1335
?	135	"	330	= 1200
2d S. S	30	"	360	= 1170
?	290	"	650	= 880
3d S. S	20	"	670	= 860
?	30	"	700	= 830
4th S. S	40	"	740	= 790
?	55	"	795	= 735
5th S. S. pebble and white sand.	56	"	851	= 679

Wet hole. Cased with 3 inch casing at 325′. Pumped 8′ from bottom.

Best production 15 barrels per day. Gas sufficient to fire 1 boiler. Green oil. Gravity 47° to 48°.

The 5th S. S. was close and white with a pebble stratum about 20′ from the top.

This farm produces black oil on its east side, from 40 to 60 rods from this well.

72. *Nell Well.* (189)

August, 1865.

Great Republic Farm, 1 mile south of Shamburg. Authority, Thomas H. Gamble.

Well mouth above ocean in feet				1410
?	40	to	40	= 1370
1st S. S	20	"	60	= 1350
?	190	"	250	= 1160
2d S. S	25	"	275	= 1135
?	195	"	470	= 940
3d S. S	12	"	482	= 928
?	118	"	600	= 810
4th S. S	40	"	640	= 770
?	95	"	735	= 675
5th S. S. sand, grey.	10	"	745	= 665
? pocket.	35	"	780	= 630

Wet hole. Cased at 352′. Pumped 15′ from bottom.

Production ———. Black oil; very little gas.

73. *Sassafras Well, No.* 1 (191)

January, 1869.

Beatty Farm, lease No. 48, 1½ miles south-west of Shamburg, at the head of Bull Run, on the upper side of the Titusville and Plumer road. Authority, Phil. Beckman.

Well mouth above ocean in feet					1511
?	400	to	400	=	1111
1st S. S	50	"	450	=	1061
?	128	"	578	=	933
2d S. S	30	"	608	=	903
?	92	"	700	=	811
3d S. S	34	"	734	=	777
?	126	"	860	=	651
4th S. S	14	"	874	=	637
?pocket.	6	"	880	=	631

Wet hole. Cased at 604′. Pumped 8′ from bottom.

Black oil. This well was being tested when the record was being given and at that time made a good show of black oil.

74. *Rensselear Oil Company's Well, No.* 10. (246)

February 12, 1867.

On Lot 29; Beatty Farm, Cow Run, property of Clinton Oil Company, 1½ miles south-west of Shamburg. Authority, N. J. Tompkins, Supt.

Well mouth above ocean in feet					1172
Surface sand	25	to	25	=	1147
?	260	"	285	=	887
1st S. S	11	"	296	=	876
?	92	"	388	=	784
2d S. S	25	"	413	=	759
?	105	"	518	=	654
3d S. S.....white sand and pebble.	27	"	545	=	627
?pocket.	2	"	547	=	625

Wet hole. Cased at 392′ with 3 inch casing. Gas sufficient to fire 2 boilers

Best production 20 barrels per day. Green oil. Gravity 47°.

This well has been producing over two years and has averaged 16 barrels per day during that time. It is now pumping 10 barrels per day [Feb. 26th, 1869].

75. *Vicker and Russell Well.* (192)

January, 1867.

Patterson Farm, 1 mile east of Pioneer. Authority, ———.

Well mouth above ocean in feet					1403
?	712	to	712	=	691
4th S. S	12	"	724	=	679

?	101	to	825	= 578
5th S. S.	25	"	850	= 553

Wet hole. While drilling this well deeper in hopes of finding a sand-bearing green oil, the tools stuck, and the well was abandoned at the depth of 850′.

IV. *Wells along Oil Creek Valley, from Foster's Farm to Oil City.*

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76. *Sherman Well, No.* 1. (276)

1861.

On Foster Farm, Oil Creek, three-quarters of a mile above Pioneer. Authority, Josephus Chandler.

Well mouth above ocean in feet				1092
?	147	to	147	= 945
1st S. S.	18	"	165	= 927
?	132	"	297	= 795
2d S. S.	15	"	312	= 780
?	118	"	430	= 662
3d S. S. sand and pebble.	36	"	466	= 626
? pocket.	14	"	480	= 612

Wet hole. Seed-bagged on tubing at 300′.

Best production 1200 barrels per day. Green oil. Gravity 45° to 48°.

Gas sufficient to fire 12 boilers.

77. *Porter Well, No.* 1. (231)

1865.

On Foster Farm, on the bank of Oil Creek, above Pioneer. Authority ?

Well mouth above ocean in feet				1096
?	150	to	150	= 946
1st S. S.	8	"	158	= 938
?	150	"	308	= 788
2d S. S.	20	"	328	= 768
?	90	"	418	= 678
3d S. S.	30	"	448	= 648

Wet hole. Seed-bagged on tubing.

Best production 200 barrels per day. Green oil.

This well had a connection with the Grand Trunk Well, about ten rods distant from it. When the water was let into the latter well, by drawing the tubing, this well stopped flowing. But when the tubing was replaced in the Grand Trunk and the pumps started, the Porter Well would again begin to flow.

78. *Grand Trunk Well.* (232)

1865.

On Foster Farm flats, above Pioneer. Authority, —— Richards.

Well mouth above ocean in feet					1093
?	150	to	150	=	943
1st S. S.	7	"	157	=	936
?	151	"	308	=	785
2d S. S.	20	"	328	=	765
?	90	"	418	=	675
3d S. S. coarse sand and pebble.	30	"	488	=	645

Wet hole. Seed-bagged on tubing at 310′.
Best production 40 barrels per day. Green oil. Gravity 45°.

79. *Foster Well, No.* 61. (228)

January 1868.

On lease No. 61, Foster Farm, Pioneer. Authority, —— Bishop.

Well mouth above ocean in feet					1392
?	624	to	624	=	768
2d S. S.	12	"	636	=	756
?	96	"	732	=	660
3d S. S. white sand and pebble.	38	"	770	=	622
? pocket.	5	"	775	=	617

Wet hole. Cased at 630′. Gas sufficient to fire 2 boilers. Best production 30 barrels per day.

80. *Bishop Well.* (229)

1867.

On Foster Farm, near Pioneer. Authority, ———.

Well mouth above ocean in feet					1354
?	20	to	20	=	1334
1st S. S.	100	"	120	=	1234
?	436	"	556	=	798
2d S. S.	14	"	570	=	784
?	120	"	690	=	664
3d S. S. slate, sand, and pebble.	35	"	725	=	629
? pocket	10	"	735	=	619

Wet hole. Cased at 560′. Half enough gas to fire a boiler.
Best production 4 barrels per day. Green oil. Gravity 49°.

81. *Foster Well. Lease* 37. (230)

March, 1867.

On Foster Farm, near Pioneer. Authority, —— Bishop.

Well mouth above ocean in feet				1354
?	562	to	562	= 792
2d S. S	10	"	572	= 782
?	118	"	690	= 664
3d S. S.....coarse white sand and pebble.	38½	"	728½	= 625½

Wet hole. Cased at 567′. Gas sufficient to fire one boiler.
Best production 90 barrels per day. Green oil. Gravity 49°.

82. *Well No.* 1, *Lease No.* 2. (240)

July, 1867.

On the Wood Farm, near Petroleum Centre. Authority, J. A. Wharry.

Well mouth above ocean in feet				1475
?	250	to	250	= 12 5
1st S. S	45	"	295	= 1180
?	240	"	535	= 940
2d S. S	50	"	585	= 890
?	130	"	715	= 760
3d S. S	20	"	735	= 740
?	77	"	812	= 663
4th S. S.....sand and pebble.	47	"	859	= 616

Wet hole. Cased at 540′. Gas sufficient to fire 16 boilers
Flowing well. Best production 150 barrels per day. Green oil. Gravity 43°.

83. *George K. Anderson Well.* Lease No. 21. (242)

February 14, 1868.

On Wood Farm, near Petroleum Centre. Authority, J. A. Wharry.

Well mouth above ocean in feet				1534
?	615	to	615	= 919
2d S. S	50	"	665	= 869
?	75	"	740	= 794
3d S. S	10	"	750	= 784
?	136	"	886	= 648
4th S. S.....pebble.	45	"	931	= 603
?.....pocket.	49	"	980	= 554

Wet hole. Cased at 660′. Pumped 55′ feet from bottom.
This well was unproductive. It is situated on the highest hill on the Wood Farm.

84. *George K. Anderson Well, Lease No.* 5. (243)

April, 1868.

On Wood Farm, near Petroleum Centre. Authority, J. A. Wharry.

Well mouth above ocean in feet					1487
?		565	to	565	= 922
2d S. S		45	"	610	= 877
?		110	"	720	= 767
3d S. S		8	"	728	= 759
?		107	"	835	= 652
4th S. S	sand and pebble.	45	"	880	= 607
?	pocket	1	"	881	= 606

Wet hole. Cased at ——. Gas sufficient to fire 2 boilers.

Best production 40 barrels per day.

85. *George K. Anderson Well, Lease No.* 33. (245)

February 12, 1868.

On Samuel Wood Farm, near Petroleum Centre. Authority, J. A. Wharry.

Well mouth above ocean in feet					1498
?		570	to	570	= 928
2d S. S		50	"	620	= 878
?		75	"	695	= 803
3d S. S		6	"	701	= 797
?		143	"	844	= 654
4th S. S	sand and pebble.	53	"	897	= 601
?	pocket.	15	"	712	= 586

Wet hole. Cased at 611′. Pumped 17′ feet from bottom. Gas sufficient to fire 2 boilers.

Best production 20 barrels per day. Green oil. Gravity 43°.

86. *Well No.* 1, *Lease* 36. (219)

On Stevenson Farm, at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet					1368
?		457	to	457	= 911
1st S. S		13	"	470	= 898
?		105	"	575	= 793
2d S. S		2	"	577	= 791
?		140	"	717	= 651
3d S. S		45	"	762	= 606
?	pocket.	10	"	772	= 596

87. *Well No* 1, *Lease* 51. (220)

On Stevenson Farm, at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet					1350
?	428	to	428	=	922
1st S. S	6	"	434	=	916
?	145	"	579	=	771
2d S. S	30	"	609	=	741
?	83	"	692	=	658
3d S. S	46	"	738	=	612

88. *Pinner Well.* (221)

February, 1867.

On Robert Stevenson's Farm, about one mile north of Petroleum Centre. Authority, ———.

Well mouth above ocean in feet					1369
?	200	to	200	=	1169
1st S. S	40	"	240	=	1129
?	200	"	440	=	929
2d S. S	15	"	455	=	914
?	256	"	711	=	658
3d S. S.....sand and pebble.	40	"	751	=	618
?.....pocket.	14	"	765	=	604

Wet hole. Cased at 450′.

Best production 25 barrels per day. Green oil. Gravity 47°. Gas sufficient to fire 2 boilers.

This well is one of those that need some appliance to draw the gas from the well. We are now [Feb. 12, 1869] using a rotary pump, which not only increases the amount of gas, but helps the production. This well is producing as well as it was two years ago (in 1867).

89. *Well No.* 1, *Lease* 134. (213)

On Central Petroleum Co.'s land at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet					1106
?	193	to	193	=	913
1st S. S	47	"	240	=	866
?	105	"	345	=	761
2d S. S	7	"	352	=	754
?	123	"	475	=	631
3d S. S	39	"	514	=	592
?.....pocket.	52	"	566	=	540

90. *Well No.* 1, *Lease* 305. (214)

On Central Petroleum Co.'s land at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet				1257
?	340	to 340	=	917
1st S. S	50	" 390	=	867
?	103	" 493	=	764
2d S. S	7	" 500	=	757
?	110	" 610	=	647
3d S. S	48	" 658	=	599
? pocket.	20	" 678	=	579

91. *Well No.* 1, *Lease* 306. (215)

On Central Petroleum Co.'s land at Petroleum Centre. Authority, Geo K. Anderson.

Well mouth above ocean in feet				1234
?	316	to 316	=	918
1st S. S	48	" 364	=	870
?	108	" 472	=	762
2d S. S	7	" 479	=	755
?	111	" 590	=	644
3d S. S	46	" 636	=	598
? pocket.	12	" 648	=	586

92. *Well No.* 1, *Lease* 37. (217)

On Stevenson Farm, at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet				1372
?	459	to 459	=	913
1st S. S	13	" 472	=	900
?	105	" 577	=	795
2d S. S	2	" 579	=	793
?	140	" 719	=	653
3d S. S	45	" 764	=	608
? pocket	29	" 793	=	579

93. *Swamp Angel* Well, No.* 3. (247)

On lease No. 141, Central Petroleum Co.'s land at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet				1092
?	185	to 185	=	907
1st S. S	15	" 200	=	892

*It would puzzle an antiquary of the next century to explain this name; but as it was taken from the army sobriquet of the huge piece of ordnance used before Fort Sumter, the name of the well enables us to assign as its probable date 1861.

?	133	to 333	=	759
2d S. S	6	" 339	=	753
?	121	" 460	=	632
3d S. S	43	" 503	=	589
?.....pocket.	45	" 548	=	544

94. *Swamp Angel Well, No.* 4. (248)

On lease No. 141, Central Petroleum Co.'s land at Petroleum Centre. Authority, Geo. K. Anderson.

Well mouth above ocean in feet..... 1094

?	160	to 160	=	934
1st S. S	40	" 200	=	894
?	140	" 340	=	754
2d S. S	6	" 346	=	748
?	119	" 465	=	629
3d S. S	45	" 510	=	584
	42	" 552	=	542

95. *Abbe and Bailey Well.* (283)

1866.

On lease 156, Central Petroleum Co.'s land at Petroleum Centre. Authority ———.

Well mouth above ocean in feet..... 1093

?	190	to 190	=	903
1st S. S	42	" 232	=	861
?	108	" 340	=	753
2d S. S	20	" 360	=	733
?	103	" 463	=	630
3d S. S	40	" 503	=	590

Wet hole. Seed-bag at 350′.

Gas sufficient to fire 1 boiler. Mud vein at 340′.

Best production 15 barrels per day.

96. *Abbe and Bailey Well.* (285)

1865.

On lease 179, Central Petroleum Co.'s land at Petroleum Centre. Authority, ———.

Well mouth above ocean level..... 1093

?	185	to 185	=	908
1st S. S	45	" 230	=	863
?	110	" 340	=	753
2d S. S	20	" 360	=	733
?	105	" 465	=	628
3d S. S.....sand and pebble.	40	" 505	=	588
?.....pocket.	28	" 533	=	560

Wet hole. Cased at 350′. Gas sufficient to fire 1 boiler. Mud vein at 464′.

Best production 75 barrels per day. Green oil. Gravity 46°.

97. *Mary Ann Well.* (223)

April, 1868.

On lease No. 24. Bennehoff Farm, on the bluff between Petroleum Centre and Pioneer. Authority, Edward E. Partridge.

Well mouth above ocean in feet					1397
?	473	to	473	=	924
1st S. S.	11	"	484	=	913
?	139	"	623	=	774
2d S. S.	12	"	635	=	762
?	104	"	739	=	658
3d S. S. pebble and sand.	41	"	780	=	617

Wet hole. Cased at 624′. Pumped 4 feet from bottom. Mud vein on top of 3d S. S. Best production 120 barrels per day. Green oil. Gravity 46°. Gas sufficient to fire 1 boiler. Blower attached as soon as the water was exhausted.

There is a surface sand about 60 feet from the top, and a mountain sand about 100 feet below the surface sand, about 65 feet thick. I believe that wells on the flat do not find either of the above sands. On the hill, we call the sands, first, second, and third sands. Some seed-bag in the 1st sand. I think that the majority of the wells on this farm are seed-bagged in the first sand.

98 *Harding and Jones Well.* (225)

February 7, 1869.

On lease No. 9, Bennehoff Farm, on the bluff between Petroleum Centre and Pioneer. Authority, N. Jones.

Well mouth above ocean in feet					1445
?	300	to	300	=	1145
1st S. S.	30	"	330	=	1115
?	185	"	515	=	930
2d S. S.	10	"	525	=	920
?	100	"	625	=	820
3d S. S.	20	"	645	=	800
?	133	"	778	=	667
4th S. S. sand and pebble.	49	"	827	=	618
? pocket.	8	"	835	=	610

Wet hole. Cased at 520′. Pumped 6 feet from the bottom. Mud vein at 820′. Gas sufficient to fire one boiler.

Best production 50 barrels per day. Green oil. Gravity 47°.

99 *Courts and Andrews Well.* (226)

July 30, 1869.

On lease No. 8, Bennehoff Farm, on the bluff between Petroleum Centre and Pioneer. Authority, T. I. Thompson, Agent.

Well mouth above ocean in feet					1435
?		60	to	60	= 1375
1st S. S		30	"	90	= 1345
?		412	"	502	= 933
2d S. S		10	"	512	= 923
?		125	"	637	= 798
3d S. S		8	"	645	= 790
?		124	"	769	= 666
4th S. S	pebble.	43	"	812	= 623

Wet hole. Cased at 504′. Pumped 4′ from bottom. Mud vein at 808′. Gas sufficient to fire 2 boilers.

Best production 180 barrels per day. Green oil. Gravity 48°.

100. *Stuart Well.* (227)

September 1868.

On lease No. 7, Bennehoff Farm, on the bluff between Petroleum Centre and Pioneer. Authority, John Waddell.

Well mouth above ocean in feet					1405
?		60	to	60	= 1345
1st S. S		70	"	130	= 1275
?		420	"	550	= 855
2d S. S		20	"	570	= 835
?		48	"	618	= 787
3d S. S		14	"	632	= 773
?		108	"	740	= 665
4th S. S	sand and pebble.	40	"	780	= 625
?	pocket.	2	"	782	= 623

Wet hole. Cased at 554′. Pumped 4′ from bottom. Mud vein at 744′.

Best production 14 barrels per day. Green oil. Gravity 44°.

101. *Blocker Well.* (249)

June, 1868.

Columbia Oil Company's "Story Farm," Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1120
?		240	to	240	= 880
1st S. S		20	"	260	= 860
?		115	"	375	= 745
2d S. S		31	"	406	= 714

?		113	to	519	= 601
3d S. S.	pebble and sand.	52	"	571	= 549
?	pocket.	1	"	572	= 548

Wet Hole. Cased at 500′. Pumped 8′ from bottom.

Best production 175 barrels per day. Gas sufficient to fire 1 boiler. Green oil. Gravity 47°. No mud veins.

102. *Babcock Well.* (250)

July, 1866.

Columbia Oil Company's "Story Farm," Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1223
?		345	to	345	= 878
1st S. S.		41	"	386	= 837
?		89	"	475	= 748
2d S. S.		25	"	500	= 723
?		95	"	595	= 628
3d S. S.	pebble and sand.	47	"	642	= 581
?	pocket.	5	"	647	= 576

Wet hole. Not cased. Seed bag at 485′. Pumped 10′ from bottom.

Best production 165 barrels per day. Gas sufficient to fire 3 boilers. Green oil. Gravity 47°. Mud vein at 598′.

03. *Goe Well.* (251)

Columbia Oil Company's "Story Farm," Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1256
?		380	to	380	= 876
1st S. S.		32	"	412	= 844
?		108	"	520	= 736
2d S. S.		27	"	547	= 709
?		98	"	645	= 611
3d S. S.	pebble and sand.	42	"	687	= 569
?	pocket.	6	"	693	= 563

Wet hole. Not cased. Seed bag at 530′. Pumped 12′ from bottom.

Best production 120 barrels per day. Gas sufficient to fire one boiler Green oil. Gravity 47°. Mud vein at 647′.

104. *Reiter Well.* (252)

Columbia Oil Company's "Story Farm," Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1291
?		420	to	420	= 871
1st S. S		35	"	455	= 836
?		100	"	555	= 736
2d S. S		24	"	579	= 712
?		94	"	673	= 618
3d S. S	pebble and sand.	44	"	717	= 574
?	pocket.	5	"	722	= 569

Wet hole. Cased at 565′. Pumped 8′ from bottom.

Best production 55 barrels per day. Gas sufficient to fire 5 boilers. Green oil. Gravity 47°. Mud vein at 676′.

105. *Boulton Well.* (253)

October, 1868.

Columbia Oil Company's "Story Farm," Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1374
?		462	to	462	= 912
1st S. S		40	"	502	= 872
?		98	"	600	= 774
2d S. S		20	"	620	= 754
?		122	"	742	= 632
3d S. S	pebble and sand.	47	"	789	= 585
?	pocket.	5	"	794	= 580

Wet hole. Cased at 470′. Pumped 8′ from bottom.

Best production 12 barrels per day. Gas sufficient to fire one boiler. Green oil. Gravity 47°. No mud vein.

106. *Story Centre Well, No.* 1. (284)

July, 1863.

On lease No. 27, Columbia Oil Co.'s Story Farm, Oil Creek. Authority, George Boulton, Supt.

Well mouth above ocean in feet					1065
?		200	to	200	= 865
1st S. S		40′	"	240	= 825
?		90	"	330	= 735
2d S. S		31′	"	361	= 704
?		104	"	465	= 600
3d S S	sand and pebble.	47′	"	512	= 553

Wet hole. Seed bagged on tubing at 330′. Pumped 10′ from bottom. Gas sufficient to fire 3 boilers.

Best production 250 barrels per day. Green Oil. Gravity 46°.

107. *Phillips Well, No. 2.* (255)

1861.

Tarr Farm, Oil Creek, 2 miles above Rouseville. Authority, ———.

Well mouth above ocean in feet				1057
?	10	to	10	= 1047
Mountain sand	70	"	80	= 977
?	100	"	180	= 877
1st S. S.	30	"	210	= 847
?	111	"	321	= 736
2d S. S.	27	"	348	= 709
?	77	"	425	= 632
Sandy shell	2	"	427	= 630
Slate	4	"	431	= 626
"Gray rock"	40	"	471	= 586
3d S. S. not through	10	"	481	= 576

Best production 3,940 barrels per day, by actual measurement. Green oil. Gravity 46°. Mud vein at 466′. Size of hole 4 inches. Tubed with 2½ in. tubing without a working barrel.

This well has produced over 600,000 barrels of oil to present date (March 1, 1869), which has been sold at from 10 cents to $14.50 per barrel at the well.

It started to flow before drilling was completed and threw out the water and oil so furiously that the tubing could not be put in to shut off the water for three days, and even then the tubing had to be chained down to keep it from being blown out of the hole.

The well was lately searched by "Dale's crevice searcher," which reported a crevice of 3 inches at the depth of 472 7/12 feet.

108. *Union Well.* (254)

1862.

Tarr Farm, Oil Creek. Authority, ———.

Well mouth above ocean in feet				1066
?	195	to	195	= 871
1st S. S.	30	"	225	= 841
?	100	"	325	= 741
2d S. S.	25	"	350	= 716
?	130	"	480	= 586
3d S. S. pebble and sand.	30	"	510	= 556

Wet hole. Not cased.

Best production 200 barrels per day. Green oil. Gravity 47°.

109. *Lynn Well, No.* 2. (256)

November, 1867.

Lease No. 192, Tarr Farm, Oil Creek. Authority, J. H. Dilks.

Well mouth above ocean in feet					1231
?		100	to	100	= 1131
1st S. S		80	"	180	= 1051
?		240	"	420	= 811
2d S. S		20	"	440	= 791
?		90	"	530	= 701
3d S. S		32	"	562	= 669
?		75	"	637	= 594
4th S. S	pebble and sand.	42	"	679	= 552

Wet hole. Cased at 607′. Pumped 7′ from bottom.

Best production 60 barrels per day. Gas sufficient to fire 3 boilers. Green oil. Gravity 47°.

This well was torpedoed at 649′ and 664′. The production before was 15 barrels, afterwards 40 barrels.

110. *Sterling Well.* (275)

1864–5.

On Tar Farm, Oil Creek above Rouseville. Authority, Ambrose John Moran.

Well mouth above ocean in feet					1052
?		195	to	195	= 857
1st S. S		30	"	225	= 827
?		85	"	310	= 742
2d S. S		30	"	340	= 712
?		120	"	460	= 592
3d S. S	sand and pebble.	35	"	495	= 557

Wet hole. Cased at 320′. Pumped 1′ from bottom.

Best production 200 barrels per day. Green oil. Gravity 44°. Gas sufficient to fire 3 boilers. Mud vein at 465′.

111. *Byron Mitchell Well, No.* 1. (257)

November, 1868.

Lease No. 258, Blood Farm, Oil Creek, 1½ miles north of Rouseville. Authority, S. Hyland.

Well mouth above ocean in feet					1309
?		685	to	685	= 624
2d S. S		29	"	714	= 595
?		1	"	715	= 594

3d S. S.	pebble and sand.	40	to	755	= 554
?	pocket.	3	"	758	= 551

Wet hole. Cased at 685′.

Best production 120 barrels per day. Gas sufficient to fire 1 boiler. Green Oil. Gravity 44°.

This well was doing 20 barrels when a torpedo was exploded in it, which had a damaging effect, reducing the production to 8 barrels.

112. *Lady Suffolk Well.* (258)

June, 1868.

Lease No. 240, Blood Farm, Oil Creek, 1½ miles north of Rouseville. Authority, A. B. Mudge.

Well mouth above ocean in feet					1334
?		465	to	465	= 869
1st S. S.		40	"	505	= 829
?		105	"	610	= 724
2d S. S.		26	"	636	= 698
?		61	"	697	= 637
3d S. S	"gray rock."	25	"	722	= 612
?		24	"	746	= 588
4th S. S.	pebble and sand.	37	"	783	= 551

Wet hole. Cased at 706′. Pumped 7′ from bottom.

Best production 85 barrels per day. Gas sufficient to fire 2 boilers. Green oil. Gravity 45°.

113. *Ætna Well.* (259)

———— ———— ————.

Lease No. 18, Rynd Farm, Oil Creek, 1 mile north of Rouseville. Authority, George K. Anderson.

Well mouth above ocean in feet					1043
?		190	to	190	= 853
1st S. S.		28	"	218	= 825
?		114	"	332	= 711
2d S. S.		18	"	350	= 693
?		115	"	465	= 578
3d S. S.		32	"	497	= 546
?	pocket.	14	"	511	= 532

114. *Pacific Well, No.* 1. (260)

January, 1863.

Lease No. 17, Rynd Farm, Oil Creek, 1 mile north of Rouseville. Authority, Hendrickson and Walker.

Well mouth above ocean in feet					1045
?		195	to	195	= 850

1st S. S.		25	to	220	= 825
?		115	"	335	= 710
2d S. S.		28	"	363	= 682
?		110	"	473	= 572
3d S. S.		35	"	508	= 537
?	pocket.	7	"	515	= 530

Wet hole. Not cased. Seed-bag at 460′.

Best production 12 barrels per day. Gas sufficient to fire 1 boiler. Green oil. Gravity 45°.

On the Blood and Rynd Farms there is a gray S. S. lying immediately over the third rock. Most operators think that this gray sand is an oil producing rock.

115. *Well No.* 23. (261)

August, 1867.

Rynd Farm, Oil Creek, 1 mile north of Rouseville. Authority, Supt. of of Rynd Farm.

Well mouth above ocean in feet					1043
?		188	to	188	= 855
1st S. S.		23	"	211	= 832
?		117	"	328	= 715
2d S. S.		26	"	354	= 689
?		121	"	475	= 568
3d S. S.	pebble and sand.	28	"	503	= 540
?	pocket.	10	"	513	= 530

Wet hole. Not cased. Seed-bag at 190′.

Best production 10 barrels per day. Green oil. Gravity 46°.

There never was an instance on this farm of one well interfering with another. All the wells producing to-day are pumping oil only. No advantage is gained in the amount of gas by the use of casing, and casing is not much used on the farm. [March 2d, 1869].

116. *Keir Well, No.* 1. (262)

1862.

Rynd Farm, Oil Creek, 1 mile north of Rouseville. Authority, ———.

Well mouth above ocean in feet					1040
?		191	to	191	= 849
1st S. S.		23	"	214	= 826
?		117	"	331	= 709
2d S. S.		26	"	357	= 683
?		121	"	478	= 562
3d S. S.	pebble and sand.	30	"	508	= 532

Wet hole.

Best production 250 barrels per day. Green oil. Gravity 45°.

This well flowed while being drilled, from the 2d rock, or at 357′. We

tubed in this sand and the well yielded 250 barrels per day for some time, but we spoiled it by shutting off the flow by a stop cock; well was afterwards put deeper, but no increase of oil.

117. *Emory Well, No* 1. (263)

January, 1865.

A. Buchanan Farm, on Cherry Run, ½ mile above Rouseville. Authority, A. A. Emory.

Well mouth above ocean in feet				1056
?	212	to 212	=	844
1st S. S.	37	" 249	=	807
?	106	" 355	=	701
2d S. S.	30	" 385	=	671
?	111	" 496	=	560
3d S. S. pebble and sand.	34	" 530	=	526
? pocket.	13	" 543	=	513

Wet hole. Not cased. Seed-bag at 360′.

Best production 28 barrels per day. Half enough gas to fire a boiler. Green oil. Gravity 43°. Mud vein at 516′.

Very near this well a well was put down which had to be abandoned while drilling in the 2d S. S., but it was pumped for an experiment and produced 900 barrels of dark oil.

118. *Well No.* 13. (264)

December, 1866.

Farm of Union Petroleum Co. of New York, Cherry Run, ¾ of a mile above Rouseville. Authority, E. W. Hinds, Supt.

Well mouth above ocean in feet				1086
?	221	to 221	=	865
1st S. S.	67	" 288	=	798
?	86	" 374	=	712
2d S. S.	26	" 400	=	686
?	120	" 520	=	566
3d S. S. pebble and sand.	31	" 551	=	535

Wet hole. Not cased. Seed bag at 380′.

Green oil. Gravity 46°. The well is now averaging 3 barrels per day [March 3, 1869].

119. *Well No.* 6. (265)

———— ———— ————.

Farm of Union Petroleum Co. of New York, Cherry Run, ¾ of a mile above Rouseville. Authority, E. W. Hinds, Supt.

Well mouth above ocean in feet					1086
?		218	to	218	= 868
1st S. S.		67	"	285	= 801
?		85	"	370	= 716
2d S. S.		32	"	402	= 684
?		118	"	520	= 566
3d S. S.	pebble and sand.	41	"	561	= 525
?	pocket.	29	"	590	= 496

Wet hole. Not cased. Seed bag at 375′.
Green oil. Gravity 46°.

120. *Munson Well.* (267)

October, 1866.

Lease No. 1, Curtin Oil Co.'s tract, on Cherry Run, 1 mile above Rouseville. Authority, ———.

Well mouth above ocean in feet					1103
?		240	to	240	= 863
1st S. S.		32	"	272	= 831
?		108	"	380	= 723
2d S. S.		28	"	408	= 695
?		132	"	540	= 563
3d S. S.	pebble and sand.	34	"	574	= 529
?	pocket.	20	"	594	= 509

Wet hole. Not cased. Seed bag at 410′. Pumped 30′ from bottom.
Best production 120 barrels per day. Gas sufficient to fire 1 boiler. Green oil. Gravity 46°.
This well is near the celebrated Reed Well, and one record will answer for both.

121. *Champion Well, No.* 2. (268)

February, 1868.

Buchanan Farm, Rouseville. Authority, Superintendent of Rouseville Oil Co.

Well mouth above ocean in feet					1047
?		200	to	200	= 847
1st S. S.		33	"	233	= 814
?		117	"	350	= 697
2d S. S.		25	"	375	= 672
?		115	"	490	= 557
3d S. S.		15	"	505	= 542
?	pocket.	15	"	520	= 527

Wet hole. Not cased. Seed bag at 360′.
Best production 100 barrels per day. Gas sufficient to fire 2 boilers.
This well only produced for two days; stopped short off. Think it

pumped what oil it did from the 2d sand. Think it best not to drill through the 3d sand, less likely to get salt water.

122. *Elizabeth Well.* (269)

1862.

Clapp Farm, Oil Creek, between Rouseville and Oil City. Authority?

Well mouth above ocean in feet					1005
?		200	to 200	=	805
1st S. S.		20	" 220	=	785
?		140	" 360	=	645
2d S. S.		15	" 375	=	630
?		85	" 460	=	545
3d S. S.		30	" 490	=	515
?	pocket.	110	" 600	=	405

Wet hole. Cased at 373′.

Best production 100 barrels per day. Green oil.

The well is now being pumped from the 2d S. S.; in pumping a large amount of water with a little oil, perhaps 6 barrels on an average [March 4, 1869].

V. *Wells along the Allegheny River from Oil City to West Hickory.*

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123. *Siverly and Gardner Well.* (270)

1866.

Lease No. 11, Siverly Farm, Allegheny River $1\frac{1}{4}$ miles above Oil City. Authority, J. W. Gardner, Supt.

Well mouth above ocean in feet					1012
?		260	to 260	=	752
1st S. S.		20	" 280	=	732
?		110	" 390	=	622
2d S. S.		20	" 410	=	602
?		80	" 490	=	522
3d S. S.	pebble and sand.	31	" 521	=	491
?	pocket.	19	" 540	=	472

Wet hole. Cased at 400′.

Best production —. Half enough gas to fire a boiler. Green oil. Gravity 46°.

This well is a fair type of 15 wells on the Siverly farm, which altogether produced 40 barrels per day. They are pumped by heads.

124. *Lowell Well.* (271)

March, 1867.

Howard Oil Association lease, Alcorn Farm, Allegheny River, 3 miles above Oil City. Authority, L. Lowell.

Well mouth above ocean in feet					1016
?	278	to	278	=	738
1st S. S.	8	"	286	=	730
?	70	"	356	=	660
2d S. S.	9	"	365	=	651
?	29	"	394	=	622
3d S. S.	21	"	415	=	601
?	81	"	496	=	520
4th S. S. .shelly.	34	"	530	=	486
? .pocket.	20	"	550	=	466

Wet hole. Cased at 100′.

Best production 6 barrels per day. Half enough gas to fire a boiler. Green oil. Gravity 42°.

The wells on the river in this locality do not afford much gas.

Torpedoes have been tried in some wells above Oil City with no advantage.

125. *Vandergrift Well, No.* 1. (272)

August, 1868.

On 10 acre tract, by H. McClintock Farm, on Allegheny River, about 3 miles below Oleopolis. Authority, J. J. Vandergrift.

Well mouth above ocean in feet					1039
?	197	to	197	=	842
1st S. S.	20	"	217	=	822
?	74	"	291	=	748
2d S. S.	30	"	321	=	718
?	20	"	341	=	698
3d S. S. ....pebble.	18	"	359	=	680
? .....pocket.	11	"	370	=	669

Wet hole. Seed-bagged on tubing at 120′.

Best production 1 barrel per day. Green oil. Gravity 40°. Half enough gas to fire a boiler.

This well is in the vicinity of a number of wells, all of which are pumping oil from the 2d sand. The oil is of lighter color, but heavier gravity, than the Oil Creek oil. Some of these wells have been pumping for six years [March 5, 1869].

126. *Madden Well.* (273)

1865.

On Anderson Petroleum Co.'s Farm, Allegheny River, ½ mile below the mouth of Pithole Creek. Authority, ———.

Well mouth above ocean in feet	1032

?		160	to	160	= 872
1st S. S.		44	"	204	= 828
?		83	"	287	= 745
2d S. S.	sand and pebble.	18	"	305	= 727
?	pocket.	4	"	309	= 723

Wet hole. Seed-bag at 170′.

Best production 60 barrels per day. Amber oil. Gravity 42°.

It is said that the 3d sand has not been found in this locality, though wells have been drilled 600′ and 800′ deep.

127. *Smith and Schribel Well.* (299)

June, 1869.

Hussey and McBride Farm, Henry's Bend, Allegheny River. Authority, ———.

Well mouth above ocean in feet 1027

?		149	to	149	= 878
1st S. S.		22	"	171	= 856
?		62	"	233	= 794
2d S. S.		10	"	243	= 784
Red slate		11	"	254	= 773
3d S. S.		12	"	266	= 761
?	pocket.	3	"	269	= 758

Wet hole. Cased at 150′.

Best production 8 barrels per day. Amber oil. Gravity 42°.

Another well on the side hill 109′ above this well went through 3d S. S. at 375′. This well is about 10′ above surface of river.

128 *Hunter, Hebert and Carll Well.* (306)

1869.

Hunter Run, ½ mile from Allegheny River, opposite Tionesta, Forest Co. Authority, John F. Carll.

Well mouth above ocean in feet 1092

?		160	to	160	= 932
1st S. S.		8	"	168	= 924
?		90	"	258	= 834
2d S. S.		8	"	266	= 826
?		15	"	281	= 811
3d S. S.		10	"	291	= 801
?		15	"	306	= 786
4th S. S.	coarse pebble in red mud.	15	"	321	= 771
?		116	"	437	= 655

Wet hole. Some oil and gas.

129. *Hamilton Well.* (200)

September, 1869.

Hickory Farm Oil Co., Allegheny River at the mouth of West Hickory Creek, Forest Co. Authority, ———.

Well mouth above ocean in feet				1100
?	100	to	109	= 1000
1st S. S	25	"	125	= 975
?	35	"	160	= 940
2d S. S. not through.	6½	"	166½	= 933½

Wet hole. Not cased. Seed-bag at 104′.

Best production 60 barrels per day. Green oil. Gravity 33°.

This well, like most others on this and adjoining farms, pumps a large amount of water, which is supposed to come into the well with the oil. November 5, 1869, it was pumping 6 to 10 barrels of heavy oil with 100 to 200 barrels of water.

VI. *Wells at Enterprise in Warren County.*

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130. *Benedict Estate Well, No.* 1. (167)

Summer of 1865.

Benedict Estate Farm, Enterprise, Warren Co. Authority, ———.

Well mouth above ocean in feet				1235
?	192	to	192	= 1043
1st S. S	50	"	242	= 993
?	58	"	300	= 935
2d S. S	6	"	306	= 929
?	29	"	335	= 900
3d S. S	10	"	345	= 890
?	97	"	442	= 793
4th S. S	6	"	448	= 787
?	14	"	462	= 773
5th S. S. pebble.	15	"	477	= 758
? pocket.	10	"	487	= 748

Wet hole. Cased at 342′. Pumped 10′ from bottom.

Best production 8 barrels per day. Half enough gas to fire 1 boiler. Green oil. Gravity 47°.

131. *McKinney Well, No.* 1. (170)

March, 1869.

Lease No. 9, Benedict Estate Farm, Enterprise, Warren County. Authority, C. B. McKinney.

Well mouth above ocean in feet	1222

? ..... estimated.	183	to	183	=	1039
1st S. S.	50	"	233	=	989
?	79	"	312	=	910
2d S. S.	10	"	322	=	900
?	88	"	410	=	812
3d S. S.	20	"	430	=	792
?	10	"	440	=	782
4th S. S. ..... pebble.	16	"	456	=	766
? ..... pocket.	18	"	474	=	748

Wet hole. Cased at 338′.

Best production 180 barrels per day. Gas sufficient to fire 2 boilers. Green oil. Gravity 45°.

The 4th S. S. is the oil bearing rock. The 2d S. S. contains large veins of salt water. The well has been run one month and is as good as ever on an average.

132. *McKinney Well, No. 2.* (171)

August, 1868.

Lease 17, Benedict Estate, Enterprise, Warren County. Authority, C. B. McKinney.

Well mouth above ocean in feet 1225

? ..... estimated.	196	to	196	=	1029
1st S. S.	60	"	256	=	969
?	58	"	314	=	911
2d S. S. ..... pebble.	14	"	328	=	897
?	86	"	414	=	811
3d S. S.	20	"	434	=	791
?	10	"	444	=	781
4th S. S. ..... pebble.	21	"	465	=	760
? ..... pocket.	17	"	482	=	743

Wet hole. Cased at 335′. Pumped 6′ from bottom.

Best production 30 barrels per day. Gas sufficient to fire one boiler. Green oil. Gravity 45°.

A torpedo improves the well. 2d S. S. contains salt water. 4th S. S. is oil producing.

VII. *Wells at Church Run and in its Vicinity, in Crawford County.*

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133. *Eureka Well.* (202)

November 1865.

On land of Atlantic and Great Western Petroleum Co., on Church Run, one and a-half miles north-east of Titusville, Crawford County. Authority, H. S. Rogers, Superintendent.

Well mouth above ocean in feet 1327

?		230	to	230	= 1097
1st S. S.		67	"	297	= 1030
?		174	"	471	= 856
2d S. S.		15	"	486	= 841
?		18	"	504	= 823
3d S. S.	very coarse with pebbles.	70	"	574	= 753
?	pocket.	10	"	584	= 743

Wet hole. Cased at 350′. Pumped 15′ from bottom.

Best production 175 barrels per day. Gas sufficient to fire 3 boilers. Green oil. Mud veins are found in some of the wells on the higher ground, but were rare in the Eureka well.

This well from the long time that it has been pumping can be considered to be one of the most remarkable in this region, having been one of the first drilled on Church Run. It now averages 140 barrels per week [February, 1869].

When first started it produced about 52 barrels per day. It gradually ran down until in May (1868), it was producing about 25 barrels per week. . It was then cleaned out, casing and seed-bag being drawn, and torpedoed in the middle of the third sand. Casing was then put in, and it was started up, and for some days produced 175 barrels per day. Referring to the books, I find that in one week it pumped 910 barrels of the best, clear Church Run oil.

We find that a torpedo, every six weeks, is required to be exploded in the middle of the third sand, to open up and clean the rock. There is still sufficient gas to run the engine [February, 1869].

The company are now pumping their eleventh well. Out of this number but two have proved failures.

134. *Niagara Well, No.* 1. (201)

May, 1867.

On three acre tract, formerly Cadwallader and Morse at Church Run, Crawford Co. Authority, ———.

Well mouth above ocean in feet					1312
?		218	to	218	= 1094
1st S. S.		40	"	258	= 1054
?		200	"	458	= 854
2d S. S.		15	"	473	= 839
?		16	"	489	= 823
3d S. S.	pebble and sand.	65	"	554	= 758
?	pocket.	9	"	563	= 749

Wet hole. Cased at 300′. Pumped 13′ from bottom.

Best production 25 barrels per day. Gas sufficient to fire 1 boiler. Green oil. Gravity 45°.

135. "*Ike*" *Weed Well.* (204)

January, 1867.

On tract of Williams, Severance and Co., on Church Run, one and a quarter mile north-east of Titusville, Crawford Co. Authority, L. H. Severance, Treas.

Well mouth above ocean in feet				1394
?	298	to	298	= 1096
1st S. S.	30	"	328	= 1066
?	209	"	537	= 857
2d S. S.	15	"	552	= 842
?	19	"	571	= 823
3d S. S. ....pebble.	66	"	637	= 757
? ....pocket.	9	"	646	= 748

Wet hole. Cased at 400′. Pumped 35′ from bottom.

Best production 15 barrels per day. Oil green. Gravity 47°. Gas sufficient to fire 1 boiler.

Well is now [February 12th, 1869] pumping on an average 6 barrels per day. Are only running it in the day, making but 12 hours pumping. With torpedoes, has pumped 10 barrels per day.

136. *Humphrey Well, No.* 2. (205)

December, 1868.

On Atlantic and Great Western Petroleum Co.'s tract on Church Run, one and one-half miles north-east of Titusville, Crawford Co. Authority, —.

Well mouth above ocean in feet				1425
?	330	to	330	= 1095
1st S. S.	60	"	390	= 1035
?	175	"	565	= 860
2d S. S.	25	"	590	= 835
?	20	"	610	= 815
3d S. S. ....sand and pebble.	62	"	672	= 753
? ....pocket.	3	"	675	= 750

Wet hole. Cased at 404′. Pumped 14′ from bottom.

Best production, 300 barrels per day. Green oil. Gravity 45°. Gas sufficient to fire 3 boilers.

This well is now [February 9th, 1869] pumping 65 barrels per day.

137. *Yreka Well, No.* 1. (206)

August, 1868.

On the Weed Farm, Church Run, $1\frac{1}{4}$ miles north-east of Titusville, Crawford Co. Authority, Chester Morse.

Well mouth above ocean in feet				1454
?	365	to	365	= 1089

1st S. S.		63	to	428	= 1026
? including 2d S. S		212	"	640	= 814
3d S. S.	sand and pebble.	60	"	700	= 754

Wet hole. Cased at 365′.

Best production 70 barrels per day. Gas sufficient to fire 2½ boilers. Green oil. Gravity 45°.

138. *King Well.* (211)

1864.

On Watson Flats, ½ mile south of Titusville, Crawford Co. Authority,——.

Well mouth above ocean in feet					1168
?		170	to	170	= 998
1st S. S.		20	"	190	= 978
?		190	"	380	= 788
2d S. S.		35′	"	415	= 753

Wet hole. Cased at 180′. Pumped 10′ from bottom.

Best production 10 barrels per day. Green oil. Gravity 44°. One half enough gas to fire a boiler.

This well has been pumped nearly all the time since it was struck, while in the immediate vicinity many have been abandoned and left without any seed-bag. It is the opinion of many, that if three-fourths of the holes on the flat were seed bagged the other fourth would be paying wells at the present time [about Jan., 1869].

VIII. *Miscellaneous Wells.*

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139. *Major Well.* (279)

Summer of 1867.

On Major Farm, section 1618, Sparta Township, 2½ miles S. E. of Spartansburg, Crawford Co. Authority, Wm. Johns.

Well mouth above ocean in feet					1600
?		205	to	205	= 1395
1st S. S.		15	"	220	= 1380
?		240	"	460	= 1140
2d S. S.	white, coarse.	25	"	485	= 1115
?		260	"	745	= 855

Wet hole. Seed-bagged on tubing at 210′. Gas sufficient to fire 15 boilers. No oil

This well was tested by pumping it for one day, when it gave signs of flowing. The second day the rods and valves were drawn, when it commenced flowing gas and water at the rate of about 100 barrels per day, and continued thus for six months. The tubing was then drawn to explode a

torpedo. It was afterwards tubed, and flowed water for 9 months, when the seed-bag burst. Since then nothing has been done to it. At one time the water flowed outside of the tubing, and was thrown 15 feet high.

140. *Well No.* 175. (301)

Triumph Oil Company, Triumph, Warren Co., 2 miles south-west of Tidioute. Authority, Superintendent of Farm.

Well mouth above ocean in feet				1685
?	224	to	224	= 1461
1st S. S.	28	"	252	= 1433
?	205	"	457	= 1228
2d S. S.	18	"	475	= 1210
?	85	"	560	= 1125
3d S. S.	22	"	582	= 1103
?	120	"	702	= 983
4th S. S. ....not through it.	40	"	742	= 943

No well on this farm has drilled through the 4th sand though some have gone 80′ into it. No oil is obtained below 10 to 20 feet from the top of the rock. At the present time this well is being drilled deeper into the sand.

Most of the wells in Dennis Run use gas pumps. [Nov. 4th, 1869.]

141. *Jocelyn Well, No.* 1. (294)

April 14, 1866.

Located on lease No. 1, plot 7, section C of the Jocelyn Oil Lands (old Green Farm), 4½ miles south-east of Pleasantville, and 3 miles south of Neilltown, Forest Co. Authority, A. H. Jocelyn, Vice-President.

Well mouth above ocean in feet				1597
?	112	to	112	= 1485
1st Mt. S. S.	50	"	162	= 1435
?	150	"	312	= 1285
2d Mt. S. S.	25	"	337	= 1260
?	243	"	580	= 1017
1st Oil S. S.	78	"	658	= 939
?	27	"	685	= 912
2d S. S.	25	"	710	= 887
?	70	"	780	= 817
3d S. S.	45	"	825	= 772
?	17	"	842	= 755
4th Extra S. S. ....white pebble.	15	"	857	= 740
?	143	"	1000	= 500

Wet hole. Not cased. Pumped at 800′ from top.

Best production 1 barrel per day. Little gas. Black oil. Gravity 40° and 47°. Mud vein 790′ to 798′.

"Owing to accident, losing tools in this well, and fishing for them several weeks in a stiff mud vein at top of the pebble rock, the well was spoiled. She was afterwards drilled to 1000′ as an experiment, to ascertain the fullest extent of Geology, but found nothing of importance below 857′, and the full regular oil-bearing rocks ending at 857′. It is my opinion, after careful study and practical knowledge, that this land is equal to the best oil territory, and with further developments will prove an extended oil field. This geology differs from all below on Stewart's Run."

The foregoing records are published to secure them against accidental loss by fire or otherwise, and to place them in a convenient form for reference. Many of them are imperfect, and some, without doubt, do not correctly represent the stratification of the rocks drilled through; still they are of great value, and when the whole series is completed there will be a sufficient number of approximately reliable ones to exhibit in a very satisfactory manner the general underground structure to any one who will take the trouble to study it out. Their value will be more apparent years hence than it is now, when the old districts are again worked over, as they undoubtedly will be, and the early records are not otherwise to be obtained. During the first development of a district, when scores of wells are in operation, almost every well owner or employé has a knowledge of the rocks sufficient for all practical purposes; but when the district has become partially exhausted, and the original operators have moved forward to other fields, leaving new men behind who know very little of the history of the wells, then these printed records will be sought after and appreciated.

If this plan of preserving records had been adopted when oil was first discovered and followed up to the present time what a vast amount of valuable material would now be accessible to all. Thousands of faithfully kept registers have been made. Some were merely written in a convenient place on the derrick or engine house and perished with the well; some were kept in daily hand-books which were discarded and destroyed as they became old; many have been consumed by fire, that inevitable visitant of all our oil towns; and others are now stowed away among the oil region relics of those who have left the country, and scattered almost to the four corners of the earth. Scarcely one in a hundred of them can now be found.

Those who have well records in their possession can now have them published and preserved with the papers of the survey by mailing them to the headquarters of the Oil District at Pleasantville, Pennsylvania. They will be printed in pamphlet form from time to time as they accumulate in sufficient numbers, for free distribution to those who have contributed them.

In examining these records it will be observed that the first column of figures gives the thickness of each sand-rock or interval; the second, the depth from the surface to both the top and bottom of each sand rock or interval; and the third, the elevation above ocean (where it is known), so that it can be seen at a glance, without any calculation, just what the thickness of each formation is, how far it lies below the surface, and how high above the ocean. This form of keeping records if universally adopted will be found to greatly facilitate their comparison and study.